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ABSTRACT

A study was conducted to determine whether a medical facility could provide an ecologically viable base for an educational intervention program for low income parents of preschool children. A total of 518 mother/child dyads participated in the study. Children were 20 to 39 months of age; 60 percent were Hispanic, and 40 percent were Black. Since a control group was deemed inappropriate, subjects matched by age, sex, and ethnicity were assigned to either an early or a late group. Children were tested in English or Spanish on the Cattell Infant Intelligence Scale and/or the Stanford-Binet Intelligence Test before and after they entered the program. Parent/child interaction was observed, a toy-sorting task was administered, and two questionnaires were completed by parents to ascertain their views about the program and their knowledge about child development. The parent education program emphasized the importance of the parent as a teacher providing rational explanations and optional solutions to help the child learn during play activities. For each age group, 12 sequentially graded exercises were developed; these concentrated on problem solving, perceptual-motor skills, and language skills. Among numerous findings, pretest and posttest comparisons indicated that low income parents could improve their preschool children's performance. (Related materials are appended, including sample program worksheets and a list of program materials.) (RH)

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FINAL REPORT

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Principal Investigator: Anne G. Morris, Ph.D.

Signature of Principal Investigator

Anne G. Morris

Title of Grant: A Parent Education Program in the Pediatric Clinic

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AIMS OF THE PROJECT: (PROBLEM STUDIED)

6. Describe briefly the *specific aims* of your project, indicating major changes in direction from the original aims:

The original aims follow:

1. What is the effect on the child of an early intervention program as measured by his performance?
2. How effective if the ghetto parent, often with many educational deficits as a teacher of her own child?
3. How can the parent be helped to provide an enriched environment for her child?
4. What is the importance of the socialization of the program to the ghetto parent who is often trapped in a lonely and hostile environment?
5. How does the socialization of the program affect the relationship of the parent to the child?
6. What is the effect of such a program on the emotional development of both mother and child?
7. Is there a response in terms of parent interest that can be measured by using demographic and test indices?
8. Will the parent carry out such a program with future children or will she still require guidance?
9. Is there a difference in learning curves in children, of Puerto Rican heritage, who are taught in Spanish versus English?

When the project became operational the original aims were consolidated to delineate the major objectives of the study. They are listed below:

1. Can the medical facility provide an ecologically viable base for an educational intervention program for parents of preschoolers from low income backgrounds? This was measured by 4 levels of program status as related to demographic indices, attitudinal measures and IQ tests.
2. A) Is there a measured difference in performance in children whose parents completed the program as compared with untreated children? B) Is there a measured difference in pre-and post-test scores of children whose parents completed the program?

7. Were the aims pursued as *originally formulated?*

(15) 1 ☐ Yes 2 ☒ No

a) Aims 2, 3 and 7 were subsumed under aim B.
b) Aim 8 was discarded since a longitudinal study would be required to determine the parent's ability to carry out similar activities with younger children in terms of generating her own educational program.
c) Aim 9 was discarded due to limitations in staff and time which did not permit a systematic monitoring of the training in the home to measure the effect of Spanish vis a vis English on learning curves,

(con'd on p. 2a)

TYPE OF RESEARCH:

8. In general, how would you *characterize* your research? (Rank any multiple answers, using "1" as most appropriate)

(16) ☐ Hypothesis development
(17) ☐ Hypothesis testing
(18) ☐ Development or refinement of methodology
(19) ☐ 2 Gathering of data; e.g., surveys
(20) ☐ Other *(Specify)*:

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d) Aims 4, 5 and 6 were to be assessed by the Rotter Internality-Externality Scale, The MMPI subset (Anxiety and Depression Questionnaire) and the Plutchik Exploratory-Interest Questionnaire. These tests were not feasible for use for the population under study since major revisions as well as translations would have been required to make them acceptable as well as understandable to the parents. They were replaced by an open ended questionnaire administered to parents post-training along with inobtrusive measures of rate of attendance at party-meetings and clinical observations of dyadic behaviors at the training sessions.

CONDUCT OF RESEARCH:

9. Describe the *methodology* used in your research, including characteristics of any sample used:

Subjects. Five hundred and eighteen mother-child dyads were recruited from the Mount Sinai Hospital Pediatric Clinic, the Mount Sinai Hospital Pediatric Emergency Room and the East Harlem Child Health Station. The children were 20-39 months of age. The ethnic breakdown of the population at the Mount Sinai Hospital was approximately 60% Hispanic and 40% Black. Subjects were from low income families in the East Harlem and South Bronx communities.

Procedures

Recruitment of subjects. All parents in the respective waiting rooms with children in the target age group were contacted by bi-lingual interviewers. Since the program was carried out in open areas it was felt that it was obligatory to permit all waiting parents, whose children met the age requirements, to participate. However, the research study was limited to children from Hispanic and Black families since the number in the other groups were too small.

Interview procedure. A brief description of the program was given in English or Spanish. First, parents would be shown how to teach their children at home by playroom assistants in the clinic playroom. Second, each child would be evaluated before and after the program.

If the parent agreed to participate, an interview form was filled out. Two modes of interviewing were used to assess for possible biasing factors. In mode one, the interview and the evaluation of the child were separated in time. In mode two, both were administered at the initial contact. Interview forms are available in the Appendix. (cont'd on p. 3a)

10. Did you have significant *technical methodological* difficulties?
(Examples: necessary measurement tools undeveloped; unexpected inadequate data base)
If yes, describe, and explain how you dealt with them.

1 ☒ Yes
2 ☐ No (21)

1. Problem of securing a control group. As discussed in the section on methodology it was not possible to include a "no-treatment control group". However, the early-late design permitted the "late" entry subjects to serve as a "no-treatment control group".

2. Attrition effects. In the pilot study (Morris, 1973) it was reported that many parents agreed to participate possibly because they wanted to please the interviewer whereas, they had no intention of entering the program. To determine if self-selection processes that take place prior to program entry were related to demographic indices and/or to IQ scores two modes of interviewing were instituted. In mode one there was a time interval (cont'd on p. 3c)

11. Did you have significant *practical operational* difficulties?
(Examples: trouble with equipment; loss of sample or data; difficulties with cooperating units)
If yes, describe, and explain how you dealt with them.

1 ☒ Yes
2 ☐ No (22)

1. Recruitment of sample. A high rate of attrition was expected based on the previous study, (Morris, 1973). Therefore, a large sample was recruited for the first wave (n = 286) to insure the collection of the desired population. This led to the following problems: a) securing adequate space for testing; b) scheduling appointments (parents did not always arrive on time causing appointments to back up). Consequently, the recruitment procedures were revised. When cohorts of 30-40 subjects were (cont'd on p. 3d)

Assignment to treatment groups: It was believed that a traditional experimental/control design would be objectionable to the community. Therefore, an early/late design was developed so that all volunteers eventually had access to the program. After a suitable sample size was recruited subjects were matched by age, sex and ethnicity and randomly assigned to either group. The early group entered the program immediately and the late group started 6 to 8 months later. In this way the late group served as a control for the early, treated group. Parents of children assigned to the late group received a letter stating the approximate time they would be contacted to start the program. Bilingual letters were sent to Hispanic parents.

Assignment to trainer/teacher: Random assignment methods were used to assign parents to trainers with language being the only mitigating factor. Spanish speaking only parents were randomly assigned to the bilingual staff members.

Testing of children: Children were tested in English or Spanish with the Cattell Infant Intelligence Scale and/or the Stanford-Binet Intelligence Test before and after the treatment program. Children in the late group were tested a second time before they entered the program.

Parent-child observation: A parent-child observation (PCO) was held in a private room after the third session. Both the playroom assistant and professional attended. The parent used the play materials from the previous session to demonstrate how she worked with her child at home. The PCO allowed the staff to directly monitor the parent's use of materials with her child. It was also used for the in-service education of the playroom assistants. Parents did not object to this procedure and found it to be of value. The PCO form is in the Appendix.

Parent-Child Interaction Measure (PCIM). A toy sorting task (Hess & Shipman, 1968a) was administered to the dyad pre- and post training. This semi-structured interaction measure was one of a series of tasks used by Hess and Shipman (1968b) to test their hypothesis that differences in maternal teaching styles shape the child's style of processing information (Hess & Shipman, 1968b) and ultimately effect his academic performance. Since this was the rationale for the treatment variable, the educational intervention program, it was expected that the measure selected would be sensitive to changes in maternal teaching behaviors fostered by the Parent Educaton Program. The toy sorting task was pilot tested and found to be suitable for children ages 2 and 3. The scoring procedures were developed by the research staff of the project. Instructions to the parent, scoring procedures and forms are in the Appendix.

Parent Attitude Measures: Two questionnaires (see Appendix) that tapped parents' views of the intervention program as well as their base of information about child development were administered at intervals post-program.

Parent Education Program (PEP):

The curriculum was based on the theoretical constructs of development of Piaget (1963) and the developmental scales of Gesell (Gesell & Armatruda, 1947). The educational approach derived from Montessori (1964) who related the child's desire to seek out different stimuli at succeeding ages to a systematic set of play materials. The program emphasized the importance of the parent-teacher providing the child with rational expanations and optional solutions as part of his learning experiences during play activities. Parents were advised to attach words to actions because children require direction and instruction to learn. The mother became aware that the concepts her child learned, such as matching colors, were the result of a particular interaction that she had instituted in which she directed the child's attention to certain features of a toy. Although the activities were play for the child they were not random behaviors for the parent who was becoming aware of the cognitive needs of her child at different stages of development. (cont'd on 3b)

The structured teaching method was devised to show parents that there were alternative ways to approach children. They were encouraged to seek out those techniques that worked best for their child at a particular stage of development. During the training session the playroom assistant would role play "child" to prepare the parent for normal behaviors they would have to react to at home. For example, by placing a round block in a square hold the trainer demonstrated that a child will not always learn a task the first time and may have to repeat a particular behavior many times before he really understands it. This would lead to a discussion of what kinds of behaviors to expect at different ages. It was important to relate to the parent that inconsistencies in behavior were not "bad" but part of the discovery process involved in learning. The value of praise was stressed as a means of encouraging the child to attempt to master new skills. During role playing, methods of positively reinforcing learning behaviors were demonstrated.

There were 12 sequentially graded exercises for each age group that concentrated on perceptual-motor and language skills and problem solving (Morris, 1972) Each toy selected had a primary feature so that parents with limited educational experiences were able to immediately perceive the relationships of the different elements, for example, the openings in the shape box indicated clearly where each differently shaped block was to be placed. The mother was taught via modeling to supply direction, language labels and motivation, while the built-in cues of the materials enabled the child to follow her instructions. The activities for each exercise were broken down into small steps that led to a goal such as matching colors or shapes. The teaching materials were standard toys that were used to teach age appropriate concepts including object labeling and shape discrimination. A list of the materials is in Appendix B.

The curriculum was designed to meet the needs of the population served as well as the abilities of the paraprofessionals who carried out the training program. It was suspected that approximately 20% of the population was semi-literate and this was a consideration in developing the curriculum. An exercise sheet was prepared for each activity that delineated the steps with verbal labels. The manual (Morris, 1972) was used by the program staff only. However, a worksheet with a pictorial outline of each exercise was given to the parent at the close of the training session. Sample worksheets are in Appendix B. They were used as guides when carrying out the training at home. The worksheet was returned to the playroom assistant who helped the parent fill it out before proceeding to the next exercise.

Implementation of Parent Education Program

Bilingual playroom assistants, from the community, worked individually with parents in the playroom using role playing techniques and modeling. After the method was demonstrated to the parent she was asked to take the role of "mother" and the trainer became the "child". Training sessions lasted from 30-45 minutes daily. Before presenting a new exercise the trainer reviewed the effectiveness of the materials given to the parent at their last meeting.

The playroom assistants were trained from 4 to 6 weeks on the use of the curriculum. They worked on it both individually and with other staff members. The curriculum was memorized before teaching it to parents because written materials were not used when teaching. Prior to parent contact each staff member was observed by the project director. Later, the staff was monitored periodically so that teaching standards were maintained. Demonstrations of teaching methods were given at the weekly staff meetings by the project director.

between the initial interview and the developmental evaluation to permit the parent to make a decision regarding entry independent of the pressures inherent in the waiting room. In contrast, in mode two all test procedures were administered at the initial contact. It was expected that the mode two strategy would yield demographic and IQ data on those dyads who would possibly have dropped out in the time interval allowed the mode one subjects.

3. Language diversity. A large part of the Hispanic population was either bilingual or Spanish speaking only. When the interaction task was administered parents were asked to teach the child in the best possible way. It was emphasized that the language used did not effect our assessment. However, in the case of the bilingual parents it was not possible to accurately estimate the similarity between language behaviors in the clinic and their language usage at home for the following reasons. Many Hispanic parents felt that English had more status in the clinic setting. In addition, they were proud of their increased facility in English acquired from using the teaching materials of the PEP that had bilingual translations. It was reported that parents who had addressed their children in Spanish would use English during the PCIM and when problems occurred they would revert to Spanish. This issue involved personal feelings and attitudes that could not be completely resolved.

4. Monitoring the method of implementing the program. The program was mediated through the parent and the playroom assistant worked only with the mother or surrogate. To assess the parent's effectiveness in carrying out the program it would have been necessary to monitor the training periodically in the home. This was not possible as explained in #7.c,.p.2.

However, a Parent-Child Observation (PCO) was scheduled after the 3rd training session. This delay in time was planned to give the parent time to feel comfortable with the materials and teaching methods. Initially, it was carried out at home since in this setting the parent was the authority figure and was more comfortable. It was expected that this would enable the staff to get a more honest appraisal of how the program was carried out by the parent. However, in the 02 year there was increased violence in the community. Although the staff went out in teams of two they refused to go into certain areas; also, some parents expressed concern about the safety of the project staff and did not want to be responsible for their welfare. Under these circumstances, the PCO was transferred to the clinic so it would be carried out under the same conditions for all clients.

Since most parents brought the target child to the clinic when they came for their appointment it was possible to gain additional information about parent-child interactions from clinical observations before and after training. These findings were recorded in the training record and reviewed at staff meetings. When necessary teaching methods were modified to meet the needs of a particular dyad.

5. Broad scale nature of the intervention. The playroom assistant was viewed as an ombundsmun by their clients although the staff attempted to restrict their services to transmitting the teaching methods. In-service training dealt with this issue by a series of meetings with representatives of social service, nursing, etc. who described their services and referral procedures. The playroom assistants learned to refer parents to appropriate services when the need arose. However, the clientele perceived them as authority figures because of their knowledge about child rearing and their know how in getting parents to other units that could deal directly with a variety of problems. The parents' feelings about the training staff quite possibly influenced their view of the program.

recruited (a single mode was used for each cohort) subjects were matched and assigned to early or late entry groups.

2. Administration of the Parent-Child Interaction Measure (PCIM).

a. The PCIM was developed during the first half of the 01 year. Therefore, it was not available as a pre-training test for the early waves of subjects to whom it was administered only post-training.

b. The language diversity discussed in #10.3 created problems in administering, translating and scoring the PCIM which demanded additional time from the project staff.

c. The facilities for recording were primitive. A Sony tape recorder was used for transcriptions. Since both members of the dyad were uncomfortable with the microphone around the neck, it was placed on the table. As a result, the children's speech which was inconsistent in tone and often unclear was poorly recorded. Therefore, there were not sufficient data on child language for analysis.

d. Finally, the time required to transcribe the PCIM's was exceptionally long. The initial plan was to transcribe all protocols so as to compare program completed subjects with drop-outs. This was not realistic in terms of subject availability(getting the latter in for a second PCIM) and the committments and size of the project staff.

3. Adapting the curriculum to respect individual differences. The curriculum was programmed. However, it was modified for children who were unable to follow the proscribed schedule. Prior to each session parents reviewed the happenings of the past two weeks before the next exercise was demonstrated. It the playroom assistant had any questions about the child's ability to handle the materials she discussed them with the project director. If necessary, the exercise was repeated and broken down into smaller units to simplify teaching. Several children who appeared to have developmental lags were transferred to the 2 year old curriculum and/or exercises were adapted to match their abilities.

4. Setting up a program at a community based child health station. At the suggestion of the Department of Community Medicine the community based program was placed in the Wagner Child Health Station which had a liason with the medical school. This unit was developing a new system of health care and had a small population, therefore, it was not possible to recruit an adequate sample. Since our project was underway it was necessary to transfer to another health center. This change in location delayed the start of the program in the community for 7 months. In retrospect, records of clinic visits and numbers of children by age group in each child health station should have been obtained prior to selecting a community site.

5. Inability to maintain appointment schedule. A small group of parents in the program continued to have difficulty in keeping appointments at the stated time, for example, they would come in an hour or even a day late. This created problems in providing treatment on schedule since space and staff were limited. It also led to problems in data collection because it was not always possible to administer tests to latecomers. In addition, a long wait could cause a child to become irritable by the time the test was administered. This was particularly troublesome with the PCIM because in order to get a good recording it was necessary to have the cooperation of both members of the dyad.

6. Recruitment and training of bilingual testers. Although most of the Spanish parents were bilingual we found that prior to school entrance the children were customarily addressed in Spanish. Since the population was about 70% Hispanic we had to secure the services of testers with expertise with young children as well as proficiency in Carribean Spanish. This is a difficult combination to find and delayed full time testing until an adequate staff was hired. Later, we made contact with graduates of Puerto Rican universities who were attending schools in New York and maintained contact with a pool of testers who were available when needed.

7. Recruitment of paraprofessional staff from the local community. Service agencies in the community were contacted regarding applicants for the playroom assistant positions. This did not work out as expected. Due to some breakdown in communication, the applicants referred had many personal and family problems as the referring agencies somehow assumed

that the work involved would have a therapeutic effect on troubled adults. Community workers with the required qualifications who had worked with the project director proved to be an excellent source of referrals of staff of high caliber. Later, parents who had completed training were a source of job applicants.

8. Unionized staff members. Knowledge of union regulations was essential since after the probationary period it was virtually impossible to fire a staff member. An assessment procedure was set up so that new staff members were carefully evaluated on a series of needed skills during the first six weeks on the job. This prevented hiring problems and enabled us to select staff members with the potential for professional growth.

12. Describe (a) your *conclusions* or *results* as they relate to your specific aims *(please include negative results)*, and (b) their *significance* in relation to the field. Avoid highly technical language where practicable.

RESULTS:

The results of this investigation are presented in nine sections. First, a table was constructed to present the distribution of the population on program status, sex and ethnicity. These data are following by analyses of initial IQ differences between the basic groups and subgroups in the study. The third section is concerned with the effect of the program on the performance of the children. The fourth section presents the demographic variables and explores their relationship to program status. Next, personal, language and design variables are presented and their relationship to program status is examined. The results and their implications are then discussed. In section eight the data on the Parent Child Interaction Measure are presented and discussed. Finally, in section nine parent attitudes toward the intervention program along with their ideas about child development and child rearing are presented.

Description of the Population

The characteristics of the sample population were examined to see if there was an initial equivalence between the four groups as categorized on program status. These findings are presented in Table 1.

Table 1

Frequency of Subjects Classified by Sex, Ethnicity and Program Status

	*Program Completed	**Drop Out	***No Show	Lost Contact	Total
Spanish F.	60	50	58	6	174
Spanish M.	70	45	75	8	198
Black F.	17	16	28	5	66
Black M.	21	14	39	6	80
Total	168	125	200	25	518

IQ data for the following subjects were not included in the statistical analysis:

* 4 siblings who were trained after the target child and had no pretest.
6 subjects whose test one or two were invalid.
11 subjects who were overage or had physical and/or emotional problems. These included spina bifida, speech, hearing or visual deficits and emotional disturbances requiring therapeutic intervention.

** 6 children, first test was invalid.

*** 5 children, first test was invalid.

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A comparison of the percent of subjects in sex and ethnic categories for both the total sample and the program completed subjects is presented in Table 2.

Table 2

Percent of Total Sample and Program Completed Subjects Classified by Sex and Ethnic Variables

	Spanish	Black	Female	Male
Total Sample	72%(372)	28%(146)	46%(240)	54%(278)
Program Completed	77%(130)	23%(38)	46%(77)	54%(91)

The data presented in Tables 1 and 2 was unexpected. It emphasized the dominance of Hispanic families in the sample population. It had been assumed that the ethnic breakdown of the population at the child health station was similar to that of the Mount Sinai population which was approximately 60% Hispanic. However, the sample at the East Harlem site was about 80% Hispanic.

In order to establish a rational basis for comparison of the various groups and subgroups in the study, and for an adequate discussion of the findings it was necessary to analyze the initial IQ data for the total sample as any initial or pre-existing differences between the groups would indicate the need for different analytic procedures or for caution in the interpretation of outcomes. Therefore, the total sample was compared with respect to sex, ethnicity, entry and age.

A double classification analysis of variance was computed in Table 3 employing the initial IQ as the criterion variable. Subjects were classified according to sex and ethnicity.

Table 3

Two Way Analysis of Variance on Initial IQ Scores for the Total Sample Classified on Sex and Ethnicity

Source	df	MS	F	p
Ethnicity	1	1021.56	6.341	.01
Sex	1	158.31	.983	NS
Ethnicity x Sex	1	34.85	.216	NS
Within	471	161.10		

	Female			Male		
	Mean	SD	n	Mean	SD	n
Spanish	94.88	11.27	165	94.06	14.30	174
Black	98.78	11.04	60	96.76	12.92	76

There was no significant difference for the main effect of sex. However, there was a significant difference between ethnic groups in favor of the Black subjects.

In Table 4, the initial IQ's were treated by the same double classification analysis of variance to examine main effects of ethnicity and entry (early/late). The only significant effect was ethnicity.

Table 4

Two Way Analysis of Variance on Initial IQ Scores for the Total Sample Classified on Entry and Ethnicity

Source	df	MS	F	p
Entry	1	106.09	.61	NS
Ethnicity	1	1315.20	7.55	.01
Entry x Ethnicity	1	145.21	.83	NS
Within	468	174.08		

	Early			Late		
Spanish	Mean	SD	n	Mean	SD	n
Spanish	94.14	13.80	197	9[illegible].33	14.45	138
Black	99.07	12.44	70	96.79	11.70	67

Since there was some concern that the entry variables might yield differential initial IQ scores on program status, a single classification analysis of variance was carried out on three levels of program status. This analysis was done for both the early group and the late group. The analyses are presented in Tables 5 and 6.

Table 5

One Way Analysis of Variance on Initial IQ Scores for the Early Entrants Classified on Program Status

Source	df	MS	F	p
Program Status	2	4.00	.02	NS
Within	271	195.81		

	Mean	SD	n
Program Completed	95.04	14.32	110
Drop Outs	94.87	12.11	71
No Shows	95.30	14.65	93

Table 6

One Way Analysis of Variance on Initial IQ Scores for the Late Entrants Classified on Program Status

Source	df	MS	F	p
Program Status	2	515.50	3.36	.05
Within	206	153.55		

	Mean	SD	n
Program Completed	94.51	12.20	43
Drop Outs	99.73	14.68	44
No Shows	94.20	11.53	122

It can be seen that there were no significant differences in initial IQ scores for the early entrants related to Program Status categorized on three levels. However, the findings presented in table 6 revealed that for the late entrants the Drop Out group had a significantly higher mean IQ than the other two groups. A subsequent analysis of the late group at the second IQ test, given before they started the treatment program revealed no significant differences.

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Finally, initial IQ scores were analyzed with a single classification analysis of variance with age as the classifying variable for the total sample and for the three subgroups. Age was categorized on three levels: 17-20 months; 31-36 months; and 37 months and above. No significant differences related to age and initial IQ scores were found in the total population. These findings were corroborated by analysis of the three subgroups Program Completed, Drop Outs and No Shows. The analyses of variance and a description of the age characteristic of the population are presented in Table 7.

Table 7

One Way Analysis of Variance on Initial IQ Scores for the Total Sample and Three Subgroups Classified on Three Age Levels

	Source	df	MS	F	P
Total Sample	Between	2	167.50	.97	NS
	Within	481	172.32		
Program Completed	Between	2	347.00	2.53	.083
	Within	149	137.32		
Drop Outs	Between	2	128.00	.61	NS
	Within	112	210.52		
No Shows	Between	2	17.50	.10	NS
	Within	214	175.84		

	Total Sample			Program Completed		
	Mean	SD	n	Mean	SD	n
17 to 30 mos.	95.74	13.55	291	95.85	11.33	87
31 to 36 mos.	93.85	12.45	115	92.05	12.72	40
36 mos. plus	96.01	12.19	78	98.44	10.62	25
	Drop Out			No Show		
	Mean	SD	n	Mean	SD	n
17 to 30 mos.	98.06	15.06	79	94.19	13.75	125
31 to 36 mos.	93.87	10.56	16	95.07	12.59	59
36 mos. plus	96.20	13.91	20	94.06	11.84	33

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Performance of the Children

The next series of tables presents analyses of the effects of the intervention on the Program Completed subjects. Table 8 compares the IQ's of the early group, post-treatment and the late group, pre-treatment.

Table 8

Repeated Measures Analysis of Variance on IQ 1 and IQ 2 (Post-Treatment, Early Group; Pre-Treatment, Late Group) for Program Completed Subjects

Source	df	MS	F	p
Entry	1	1101.81	6.07	.015
Error	145	181.44		
Tests	1	785.38	11.72	.001
Test x Entry	1	444.60	6.63	.011
Error	145	67.01		

Group	Test	Mean	SD	n
Early	1	94.57	10.98	106
	2	100.96	11.34	106
Late	1	93.00	11.82	41
	2	93.90	10.33	41

The findings in Table 8 reveal that entry was significant at the .01 level, while a comparison of the initial IQ with the second IQ was significant beyond the .01 level. There was a significant interaction ($p = .01$) demonstrating that differences occurred between the two groups that were reflected in a higher mean IQ score for the treated subjects post-training.

The critical test was the test of the interaction. This was a test of whether or not the changes in the IQ's of the two groups were the same or were unlike. In this instance the gain of the early, treated group was significantly larger than that of the late, untreated group. To confirm this conclusion, another analysis was appropriate, a test of the pre-program and post-program data for equivalent changes. Specifically, an effective program would show no interaction of the pre-post tests with the entry effect. Accordingly, in Table 9 comparisons of pre-training IQ scores and post-training IQ scores for both groups are presented.

Table 9

Repeated Measures Analysis of Variance on Pre-Training IQ Scores (IQ 1/Early; IQ 2/Late) and Post-Training Scores (IQ 2/Early; IQ 3/Late) for Program Completed Subjects

Source	df	MS	F	p
Entry	1	62.02	.33	NS
Error	145	185.12		
Tests	1	2153.39	34.28	.0001
Tests x Entry	1	7.32	.12	NS
Error	145	62.81		

Group	Test	Mean	SD	n
Early	1	94.57	10.98	106
	2	100.96	11.34	106
Late	2	93.90	10.33	41
	3	99.58	11.74	41

The data presented in Table 9 supported the findings of Table 8 that intervention led to improved performance of treated children from both groups. A comparison of pre-treatment and post-treatment post scores was significant at the .0001 level. No significant differences were found for the entry variable and there was no significant interaction.

An examination of the initial IQ scores for the total population revealed significant differences in ethnicity favoring the Black children. Analyses of pre- and post-treatment IQ scores for the Program Completed subjects categorized on ethnicity are presented in Table 10.

Table 10

Repeated Measures Analysis of Variance on Pre-Training and Post-Training IQ Scores for Program Completed Subjects Categorized on Ethnicity

Source	df	MS	F	P
Ethnicity	1	351.41	1.92	NS
Error	145	183.13		
Tests	1	1863.05	29.71	.0001
Tests x Ethnicity	1	23.65	.38	NS
Error	145	62.70		

Group	Test	Mean	SD	n
Spanish	1	93.60	10.77	111
	2	100.12	11.86	111
Black	1	96.80	10.58	36
	2	102.00	10.00	36

The findings in Table 10 revealed that there were no significant differences between Spanish and Black subjects. All children had completed the treatment program and no significant interaction occurred as expected. However, both ethnic groups showed positive gains following the intervention that were significant at the .0001 level.

Item No. 12

In Table 3 it was revealed that there were no sex differences for the total sample in terms of initial IQ scores. An analysis for the Program Completed children of pre- and post-treatment categorized on sex was computed in Table 11.

Table 11

Repeated Measures Analysis of Variance on Pre-Training and Post-Training IQ Scores for Program Completed Subjects Categorized on Sex

Source	df	MS	F	p
Sex	1	1572.40	9.00	.003
Error	145	174.71		
Tests	1	2850.80	45.58	.0001
Tests x Sex	1	47.30	.76	NS
Error	145	62.54		

Group	Test	Mean	SD	n
Female	1	96.42	10.85	69
	2	103.46	11.76	69
Male	1	92.59	10.45	78
	2	98.02	10.56	78

In contrast to findings on the sex variable for the total sample there were significant differences as a result of treatment related to sex at the .00[illegible] level favoring the female subjects. However, both sexes responded to the intervention with positive gains in mean IQ scores that were significant at the .001 level. There was no significant interaction as overall changes in IQ scores were in the same direction and of the same magnitude for both groups. The female subjects made a slightly larger gain of approximately 1½ points.

Item No. 12

The findings of significant sex differences in the Program Completed subjects demanded a further examination of the sex variable using analysis of covariance.

Table 12

Analysis of Covariance with Pre-Training IQ Scores as the Covariate and Post-Training IQ Scores as the Dependent Variable with Program Completed Subjects Categorized on Sex

Source	df	MS	F	P
Post-test on Sex	1	5276.34	45.43	.0001
Pre-test on Sex	1	444.32	4.58	.034
Adjusted Means	1	4029.23	41.57	.0001

Adjusted Cell Means for Post Test

Male	Female
98.92	102.46

The data presented in Table 12 revealed that when differences in initial IQ scores were adjusted, significant differences between the two groups remained. However, gains for both groups were in the same direction and were equivalent since in the earlier analyses there was no significant interaction between sex and improvement in IQ.

Item No. 12

To assess the durability of the intervention procedures, Program Completed children were asked to come in for post-post program testing. Ideally, all children came in six months after the post-program evaluation. Realistically, the time lag extended from six months to one year because of the difficulty in setting up appointments. The data are presented in Table 13.

Table 13

Repeated Measures Analysis of Variance on Post-Training (IQ 2/IQ 3) and Post-Post Training IQ Scores (IQ 3/IQ 4) of Early and Late Entrants

Source	df	MS	F	p
Entry	1	737.65	3.01	.085
Error	112	244.96		
Tests	1	252.11	5.32	.023
Tests x Entry	1	86.36	1.83	
Error	112	47.36		

Group	Test	Mean	SD	n
Early	2	102.11	10.97	80
	3	101.16	12.95	80
Late	3	99.53	11.20	34
	4	95.88	13.30	34

The data presented in Table 13 indicated that the gains for both groups were attenuated after six months to one year post-program and the loss was significant at the .05 level. There was no interaction. Losses were not characteristic of one groups or the other, however, the late entries showed a greater loss than the early entries. Parents were asked to continue to bring their children in for testing at 6 month intervals. Expenses were paid for public transportation and a toy was given to the child. Those who did not come to the post-post testing session were offered a gratuity of five dollars; however, it was found that disinterested parents did not return even with monetary incentives. In contrast, those who continued to have an investment in the program beyond direct participation kept post-post training appointments, even on Saturday.

Item No. 12

Analyses of post-post training IQ tests presented in Table 14 were limited to means and standard deviations because of the differential drop-out rate.

Table 14

Response Rates, Means and Standard Deviations on Post-Post-Training IQ Tests for Early and Late Subjects

Group	Test	Mean	SD	n	Percent of Total n	Total n
Early	3	101.16	12.95	80	80%	106
	4	100.53	11.38	56	53%	106
	5	100.25	12.10	27	27%	106
Late	4	95.88	13.30	34	83%	41
	5	97.20	13.53	24	58%	41

The findings in Table 14 revealed that the mean IQ scores of the early trainees maintained the post-training gains. The late trainees showed a slight gain on Test 5 that was possibly related to the particular clients who came in for testing.

A brief summary on the performance of the children follows. The total sample and the program completed subjects were analyzed on entry, sex and ethnicity variables to see if program effects could be attributed to initial differences.

The entry factor was not found to be significant on initial IQ scores for both the total sample and the program completed group. However, the ethnic variable was significant for the total sample favoring the Black children. A similar trend was observed in the program completed subjects. Black children had higher IQ scores both pre- and post-program. The differences did not reach the .05 level of significance. The findings on the sex variable were divergent with respect to the two groups. No significant differences were found for the total sample while differences were significant for the program completed subjects with girls surpassing boys on both pre- and post-training scores. However, the gains on the post-training tests were in the same size and direction for both sexes. It appeared that some selection factors with respect to performance on the IQ test operated for boys and girls who completed the program. Significant differences at the .001 level were found for children who had completed the program (early training group) in comparison with children who had no exposure to the program (late training group) favoring the treated subjects. When the post-training scores of both groups of children were analyzed gains were significant at the .001 level for both early and late trainees. On post-post tests the early group maintained their gains while the late trainees showed a significant loss in mean IQ scores. However, it remained higher than their initial mean IQ score. The differential rate of dropping out for post-training test sessions may have some bearing on the differences found between the two groups.

Item No. 12

Demographic Variables

The relationship of a variety of demographic variables to program status was inspected in an attempt to develop a profile of a parent who would complete the program.

Interviewers were asked to respect the client's wishes in responding to questions involving demographic and personal variables. This accounts for the disparity in numbers in the analyses to follow. As specified in Table 1 there were children in the Program Completed group who did not meet the criteria for IQ analysis. Since the intervention program was carried out in a service institution, treatment was provided for children with physical and emotional problems whose parents had participated in the recruitment phase of the study. Their data were included in the study of the relation of demographic variables to program status since some completed the program. The total sample size was large enough to allow for this variance in terms of presenting results and discussing their implications.

The four levels of program status follow; (1) Program Completed (PC); (2) Drop Outs; (3) No Shows (NC); (4) Lost Contact (LC). Due to small numbers in the LC category it will be pooled with NS when indicated.

Data are presented on variables significant at the .05 level. Findings on other variables are summarized in tables at the end of each section. In the Chi square tables the first number listed is the observed frequency and the number in parenthesis is the expected frequency.

Table 15

Chi Square Analysis: Age of Child at Initial IQ Test and Program Status

Age (Mos.)	PC	DO	NS	Total
17-30	88 (92.65)	80 (70.99)	126 (132.35)	296
31-36	41 (36.93)	16 (28.30)	61 (52.76)	118
37+	25 (24.41)	20 (18.70)	33 (34.87)	76
Total	154	118	220	492

$x^2 = 9.532$, df = 4, p = .05

The findings in Table 15 revealed a significant relationship between age at the initial IQ test and the subsequent program status of the child. The highest response in terms of Program Completed children was in the middle age group from 2½ to 3 years of age. It should be noted that more than half of the Chi Square value (5.34) was contributed by the low number of Drop Outs in the middle age group.

Table 16

Demographic Variables That Were Not Significant in Relationship to Program Status

Variable	X^2	df	p
Sex of child	2.96	2	.227
Ethnicity of child	4.83	2	.089
Birth order of child	7.92	10	.637
Number of other children	8.70	6	.190
Birthplace of child*	3.28	4	.514
Born in hospital**	2.50	3.	.477
Place of interview	6.80	6.	.339
Distance from institution	8.35	4	.078

*479 out of 517 children were born in New York City.
**464 out of 466 children were born in hospitals.

Although the relationship of ethnicity to program status was not significant at the .05 level, it was tempting to speculate on the differences that did exist in the data. It suggested that there was a higher response in terms of program completion from the Spanish community. The analysis of the relationship of distance from the institution and program status revealed no significant differences. It had been expected that distance from the recruitment site would make a difference in terms of program completion and the findings were unexpected. However, the data were suggestive of a positive relationship between the location of the home and access to the institution, although it did not reach acceptable levels of significance. It was of interest to find that in the Program Completed group persons living less than ½ hour away by public transportation had less than the expected frequency, while those living farther away had the expected number of program completers.

In conjunction with the distance from the institution, the site of the interview was expected to be a good predictor. The obtained results were unexpected and will be presented. There were four areas of initial contact: (1) Mount Sinai Hospital Pediatric Clinic; (2) Mount Sinai Hospital Emergency Room; (3) East Harlem Child Health Station; (4) Mount Sinai Hospital Prenatal Clinic and Wagner Child Health Station. The East Harlem Child Health Station had the highest number of Program Completed subjects, as predicted since it had the greatest interface with the population. Unexpectedly, there were fewer Program Completed subjects from the Pediatric Clinic than the frequency expected, while the expected and observed

frequencies from the Emergency Room were equal. These findings were directly contrary to the pre-program predictions based on the greater stability of the clinic population by virtue of their presence due to a scheduled appointment.

Finally, findings in the pilot study had suggested that approximately 25% of the total population would complete the program. The data in this study revealed that 168 clients (32%) of the total population of 518 completed the study. It is also possible to categorize the total population into two groups, those who had some contact with the training program and those who had none. The former group would be comprised of Drop Outs and Program Completed subjects (n = 293), and the latter would be made up of No Shows and Lost Contacts (n = 225). Under these conditions the percentage of the total sample who had entered and/or completed the program was 56%. The rate of completion of this subgroup of 293 was 75%. This indicated that subjects who had had some contact with the program had a better than even chance of completing the training.

Personal Variables

Additional demographic variables were inspected to discern those with predictive value for Program Completed subjects.

Table 17

One Way Analysis of Variance on Program Status and Mean Age of Parents

Source	df	MS	F	p
Between: Program Status	3	254.16	4.659	.004
Within	443	54.54		

	Mean Age	SD	n
Program Completed	29.654	8.948	142
Drop Outs	27.223	6.561	112
No Shows	26.976	6.663	171
Lost Contact	25.454	4.153	22

The data presented in Table 17 indicated that as the mean age of the parent increased there was a higher rate of program completion that was significant at the .004 level.

Table 18

One Way Analysis of Variance on Program Status and Length of Time at Present Address

Source	df	MS	F	p
Between: Program Status	3	51.597	2.456	.063
Within	364	21.008		

	Mean Time	SD	n
Program Completed	5.675	5.160	117
Dropouts	4.631	4.355	95
No Shows	5.051	4.398	137
Lost Contact	2.842	2.032	19

It had been predicted that families that moved more frequently would be less stable and, therefore, less likely to complete the program. Inspection of the data in Table 18 supports this assumption. In the light of the a priori prediction t tests between mean differences were computed. However, the only group that showed significant differences in terms of length of time at the present address were those with whom contact was lost. The Lost Contact group had significantly lower mean times than the Program Completed and No Show groups but not the Drop Out group.

Table 19

Chi Square Analysis: Birthplace of Parent and Program Status

	PC	DO	NS	Total
New York City	26 (39.34)	33 (31.57)	66 (54.09)	125
South	20 (19.83)	9 (15.91)	34 (27.26)	63
Puerto Rico	89 (76.16)	67 (61.13)	86 (104.72)	242
Other	17 (16.68)	13 (13.39)	23 (22.93)	53
Total	152	122	209	483

$X^2 = 17.81$, $df = 6$, $p = .006$

The findings presented in Table 19 showed a significant relationship between the birthplace of the parent and program status. It was clearly revealed that parents born outside of New York City were more likely to finish the training program, particularly if they had emigrated from Puerto Rico.

Personal variables that were not significant in relationship to program status are presented in Table 20.

Table 20

Personal Variables That Were Not Significant
In Relationship to Program Status

Variable	X^2	df	p
Length of time in New York City*	13.04	12	.365
Location of school**	5.55	9	.785
Last grade completed***	23.71	18	.164
Kind of housing, public or private****	1.09	3	.782
Number of rooms in home	14.96	21	.826
Caretaker of child during the day	2.92	4	.574
Television*****	5.37	3	.144
Kind of television	2.63	2	.268
Total number of hours of television watched by child	1.02	6	.983
Total number of hours of television watched by parent	10.20	6	.115
Preferred language on television	6.80	4	.145
Child watches Sesame Street	5.60	6	.470
Preferred programs of parent			
Quiz shows	.20	3	.972
News	.30	3	.955
Variety	1.93	3	.591
Comedy	5.95	3	.112
Mystery	4.40	3	.219
Medical	.89	3	.829
Movies	1.98	3	.580
Soap operas	4.09	3	.250

* 220 (n = 487) in New York City less than 3 years.
** 237 attended school in New York City, 122 in Puerto Rico (n = 436).
*** 386 completed eighth grade or higher (n = 442).
**** 285 lived in private housing (n = 448).
***** 450 owned television set (n = 459).

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Language Variables

The language variables correlated with ethnicity as expected; however, it should be pointed out that in the English speaking only group there were some parents of Hispanic lineage.

Table 21

Chi Square Analysis: Language of Parent and Three Levels of Program Status

	PC	DO	NS	Total
English	45 (52.09)	32 (39.65)	88 (73.26)	165
Spanish	47 (41.99)	33 (31.39)	53 (59.05)	133
Spanish/ English	63 (60.95)	53 (46.38)	77 (85.69)	193
Total	155	118	218	491

$X^2 = 8.40$, df = 4, p = .076

Table 22

Chi Square Analysis: Language of Parent and Two Levels of Program Status

	PC	DO	NS	Total
English	44 (51.98)	32 (40.91)	91 (74.11)	167
Spanish Span./Eng.	111 (103.02)	90 (81.09)	130 (146.89)	331
Total	135	122	221	498

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$X^2 = 10.42$, df = 2, p = .005

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The language of the parent on three levels, as presented in Table 21 approached significance with observed frequencies in both Spanish and Spanish/English cells higher than expected frequencies, for the Program Completers. However, when the two Spanish speaking groups were pooled in Table 22, the findings were significant at the .005 level. It should be noted that the Spanish speakers were more highly represented in the Drop Out category than expected in contrast to the English speaking subjects who were consistently higher than expected in the No Show category.

Table 23

Chi Square Analysis: Language of Child and Program Status

	PC	DO	NS	Total
English	48 (55.63)	34 (43.06)	96 (79.31)	178
Spanish	56 (48.44)	36 (37.50)	63 (69.06)	155
Spanish/ English	51 (50.94)	50 (39.44)	62 (72.63)	163
Total	135	120	221	496

$X^2 = 12.43$, $df = 4$, $p = .014$

The data presented in Table 23 supports the earlier findings on the relationship of language to program completion. Children speaking Spanish or a combination of Spanish or English were more likely to be in the Program Completed group or to have had some contact with the training program. This was significant at the .014 level.

Table 24

Chi Square Analysis: Language Spoken in the Home and Program Status

	PC	DO	NS	Total
English	47 (55.63)	36 (43.06)	95 (79.31)	178
Spanish	60 (49.38)	36 (38.23)	62 (70.40)	158
Spanish/ English	48 (50.00)	48 (38.71)	64 (71.29)	160
Total	155	120	221	496

$X^2 = 11.84$, df = 4, p = .018

The language spoken in the home, presented in Table 24 supported the positive relationship of Spanish speakers to Program Completers. The data presented on language was consistent in that Spanish and Spanish/English speaking parents and children were more likely to complete the program or to have had some experience in the program, as in the Drop Out category, than English speaking families. These findings support the data presented earlier on ethnicity and parent's birthplace that for the population under study a Hispanic background led to greater contact with the Parent Education Program.

Item No. 12

Design Variables

In the methods section it was explained that the design variable of mode was developed to assess selective factors that may have biased entry into the program. The findings are presented in Table 25.

Table 25

Chi Square Analysis: Mode of Entry and Program Status

	PC	DO	NS	LC	Total
Mode 1*	70 (59.39)	48 (45.74)	65 (75.84)	8 (10.03)	191
Mode 2**	60 (76.18)	49 (56.68)	119 (97.28)	17 (12.87)	245
Mode 4***	18 (12.44)	17 (9.58)	5 (15.88)	0 (2.10)	40
Total	148	114	189	25	476

$X^2 = 32.59$, $df = 6$, $p = .001$

* = Mode 1, interview and evaluation separated in time.
** = Mode 2, interview and evaluation on the same day.
*** = Mode 4, volunteered for program without recruitment, evaluated under Mode 1 conditions.

The relationship of mode to program completion was significant at the .001 level. The prediction that volunteers and mode one subjects, who had a time lag between the initial interview and the evaluation, would have a higher rate of completion was confirmed.

The early/late feature of the design gave all volunteers an opportunity to ultimately participate in the program. Table 26 presents the data on this variable.

Table 26

Chi Square Analysis: Time of Entry and Program Status

	PC	DO	NS	Total
Early*	108 (86.88)	74 (67.51)	98 (125.62)	280
Late	40 (61.12)	41 (47.49)	116 (88.38)	197
Total	148	115	214	477

$x^2 = 28.53$, df = 2, p = .001

* Mode 4 clients (volunteers) were all "early" entrants.

The relationship of entry to program status was significant at the .001 level with early entrants more likely to complete the program than late entrants. It appeared that subjects contacted immediately regarding the intervention program were more likely to enter training and ultimately finish the program.

Additional design variables measured in relation to program status were: response to trainers (seven); scheduling of initial training appointment by letter/and/or telephone; arrived for initial training appointment at first or second scheduled appointment. Analyses of these variables revealed no significant differences in the rate of completion.

Discussion

The basic premise of this investigation was that an early stimulation program carried out by parents at home would lead to increased competence in performance, as measured on IQ tests, of preschoolers from culturally disadvantaged environments. The second proposition to be tested was the suitability of the well baby clinic as a site for teaching parents techniques to foster intellectual and emotional growth.

Gains in performance by the children were mediated through parents since children were not treated directly. It was anticipated that changes would occur in the parent-child interaction as a result of the mother's educational experiences in the program. The parent's increased fund of knowledge about early learning and related aspects of child development would enable her to sustain her child's intellectual growth to prevent the developmental lag that occurs in poor children as early as two years of age (Brown & Halpern, 1971; Schaefer, 1968). Finally it was hypothesized that various categories of demographic variables would have predictive value in determining different levels of program status.

The data presented supported the assumption that parents from low income backgrounds who participated in the intervention program could effect improved performance

in their preschool children. Although the early group made a slightly larger gain, both groups showed positive gains in performance that were significant.

The sex differences in performance favoring girls of both ethnic groups may be partially explained by the child rearing patterns in the Black and Hispanic communities in this study. There was encouragement of what could be described as "macho" behavior for boys. That is, aggressive as well as negative behaviors were applauded as well as condoned when exhibited by boys; whereas, girls were expected to conform more readily to instruction. The testers reported that boys, especially those of Spanish heritage, were the most difficult to test.

It should be mentioned that although the children in the study were difficult to test, in terms of getting an adequate estimate of performance, they did not object to the testing procedures. Rather, they enjoyed the attention and often lollipops were used to entice children to leave the testing room rather than to induce cooperation. Most children in East Harlem had had little experience in the kind of dialogue that takes place in the testing situation since they were not encouraged to perform on the cognitive parameters measured. The parents had more concerns about behaviors such as feeding and toilet training. Their lack of interest in the concurrent intellectual development of their children was reflected in the diminished ability of the latter to respond to the tester's requests. It did not indicate a lack of cooperation for the majority of the subjects tested.

In this sample it was found that children aged 2½ to 3 years of age were the most difficult to test. This may indicate a developmental lag particular to this population since White and Watts (1973) reported that in the Brookline project they postponed testing during the 15 to 21 month period because of fussiness and lack of cooperation. However, in the study under discussion there was no possibility of delaying the testing procedures. They were carried out to the best ability of the testers. Starting at age three, the children were generally more amenable to directives.

The results presented on the relationship of a variety of demographic variables to program status ranged from insignificant to strongly predictive. The findings on birth order were unexpected as it had been assumed that first born children would have the highest observed frequency in the Program Completed group. However, for this category it was found that later born children had the expected frequency while there were less than expected first-borns. One reason may be that many families had several children under three years of age. It is likely that those with infants as well as toddlers were unable to arrange their schedules to allot time for a program aimed at the older child because of the needs of the baby. A second reason may be related to the age of the parent. It was reported in Table 17 that the mean age of the Program Completed parents was greater than that of the other three groups. Possibly young mothers with only one child were overwhelmed by the demands of the firstborn and were unable to organize their time to allow them to participate in the program. Another reason to consider is that older parents may have had older children in school who were not doing well. This may have made them more aware of the need to prepare the younger child for school. Since parents did refer to the program as "school" when talking about it to their children, it would appear that they saw it as an educational experience that would prevent the children from incurring problems that were rampant in the East Harlem schools. This is an opportune time to emphasize the importance that the Program Completed parents placed upon education. They felt that proficiency in school would lead to success in the job market and subsequently, to economic gains.

The relationship of age at initial IQ to rate of program completion was unforseen. Significantly more children in the middle age group of 2½ to 3 years completed the training. The increased responsiveness of children in this age group may have served as

a positive reinforcement and induced parents to stay in the program. In addition, children of this age are extremely active and curious. Their parents may have found the program to be of practical assistance in helping them to divert their children with age appropriate play activities. Further, according to the parents the older children responded quickly and positively to the play activities; whereas, it required more time and patience to gain the cooperation of the younger children, who had a shorter attention span.

The sex of the child had no significant relationship with program status. However, there were more females in the Program Completed and Drop Out categories than expected, while it was reversed for the male subjects. Girls tend to be more docile and amenable to instruction and are easier to work with than boys. For these reasons parents of girls may have been more willing to enter and complete the training. Sex differences in performance may also be related to the data reported in Table 11 that pre- and post-training IQ scores of girls were higher than the boys in both ethnic groups. In the population under study it was found that women often had higher job status than men which may be related to their socialization in the early years. It may be that the male role was defined early in life as more physical while females were expected to be more academically inclined.

Although the findings on ethnicity as presented in Table 16 were not significant, it was tempting to try to find a rationale for the preponderance of Hispanic subjects. There were antagonisms between the Black and Hispanics in the community as both sought to utilize the limited resources available. The staff at East Harlem was bilingual because of the large number of Spanish speaking only adults attending the health station who ultimately entered the program. There is a possibility that the Black parents perceived the intervention program as Spanish oriented because of the staff and this may have caused some to decide not to enter the program. Here again there may have been selection factors operating that were not controlled by the design. English speaking parents from both ethnic groups were randomly assigned to playroom assistants, who were both Hispanic and Black. This did not lead to any problems, however, several bilingual Hispanic parents asked to work with a staff member who could also teach them in Spanish.

Distance from the institution was not significant (Table 16) however, it was revealed that parents living farther away were more likely to complete training than parents less than ½ hour away by public transportation. It is suggested that adults living farther away from the hospital were more comfortable in refusing to participate. In contrast, those who lived closer in terms of transportation time were unwilling to refuse to comply with the interviewer's request. However, later they revealed their true feelings by a higher than expected rate of No Shows.

The contradictory findings discussed earlier relating to site of interview suggest that carefully considered assumptions must often be rejected when the evidence is analyzed. It was found that the emergency room which handles more high risk families was as suitable as the pediatric clinic as a recruitment site for an educational intervention program. In addition, contact with the emergency room population permitted the program staff to provide a service to a more deprived population than that using the clinics.

The attrition rate was lower than expected for the total sample. In comparing drop-out rates with other programs (Andrews et al. 1975; Lambie et al. 1974) it was found that attrition data was presented on children whose parents had entered the programs as either treatment or control subjects. However, the design emplcyed in this study also provided information on the large numbers of children who do not have the opportunity to gain enrichment from programs mediated through parents. The data presented suggests that the two populations, those who had contact with the program and those who did not, were

similar in terms of performance and on many demographic variables. Possibly differences relating to entry and completion were due to attitudinal factors or some other factor not tapped.

The personal variables of mean age of parent and length of time at the present address both had predictive value. It is suggested that older parents were able to take advantage of this service because they were more aware of their strengths and deficiencies. Further, it is posited that they were more confident in contrast to younger parents. The latter tended to be unsure and were possibly threatened by the idea that they needed help with child rearing whereas the former were looking for support and information.

The length of time in residence had been perceived as a reliable predictor of stability. The longer time interval at the current residence reported for the program completed subjects served as an additional predictor of completion although the relationship did not reach significance.

The strong predictive value of birthplace outside of New York City presented in Table 19 may partially explain the ethnicity findings. The higher than expected response from adults born in Puerto Rico coupled with the expected number of responses from those born in the South and other areas outside New York stands in direct contrast to the markedly less, observed response, of those parents born in New York City. The difference noted may reflect both cynicism and disillusionment of native born New Yorkers towards new programs. It would appear that people immigrate to New York City to take advantage of available services to better their family situation.

The significance of the findings on the language variables was supportive of data presented earlier on ethnicity and birthplace of parent. In the population under study language proved to be a powerful predictor of program completion. East Harlem and Spanish Harlem are almost synonymous terms. This area is considered the center for the Hispanic community in New York. Therefore, the language findings were expected as the population at the child health station was heavily Spanish. In addition, the playroom assistants were the only Spanish staff working in the health station. This possibly biased the Spanish speaking parents in our favor.

The design variables proved to be excellent predictors of program status. The mode one strategy gave parents a time interval to made an independent judgment regarding program entry. This permitted the staff to concentrate on parents who had a commitment to the program. The mode two group included many parents who did not plan to enter the program. As a result staff time and services that would have been more effectively employed elsewhere were wasted. It was expected that a delay of time in entry to the program would result in a higher rate of attrition and this was confirmed.

In reviewing the predictive value of the demographic variables it appears that language and ethnicity outcomes may have been idiosyncratic to the population under study. However, the design variables were not related to any particular cultural preferences. Rather they involved practical considerations, specifically time of entry and the freedom to make a decision about participation outside of the institutional setting. These findings could be generalized to other populations since they appeared to be independent of the sample recruited.

The findings presented indicate that low income parents and their children have derived benefits from an educational intervention program based in a medical facility already used by the family for child health care. Further, it was found that parents kept clinic appointments solely to gain information to enable them to help their children

to learn.

The profile of the parent who completed the program is not clear cut. It was partially circumscribed by the community in which the program was carried out. It was found that older (mean age, 29.65 years), Spanish speaking parents, born outside New York City and living in their current residence for about 5½ years were more likely to finish the training. Generally, those who came in for testing after the initial interview and entered the program immediately were more likely to be in the Program Completed category.

Parent Child Interaction Measure (PCIM)

It was planned to administer the PCIM to all program completed subjects but it was not available for the early waves pre-treatment. No findings are presented on child behaviors as the data were too scanty to analyze while pre-post data are limited to 51 dyads. Before presenting the data it is noted that question suggestions (#7) and nonquestion suggestions (#8) are broken down into more discrete categories in items 11-22. The data presented in tabular form are significant at the .05 level or below. A comparative listing of all variables is presented in Table 54. The PCIM will be presented in four sections followed by a discussion.

Comparison of pre-training PCIMs of program completed subjects with post-training PCIMs of program completed subjects who had no pre-training PCIM.

The findings presented in Table 27 (p.33) revealed significant decreases in maternal behaviors at the post-test for the nonverbal intrusions, movement of objects (#2) and other intrusions (#4). As predicted there was a significant decrease in the time to administer the task (#5) at the post-test. Verbal interactions with significant decreases over time were nonquestion suggestions (#8), negative feedback (#10) and directives without information (#21). A significant increase in reported behavior was found only for the verbal interaction, reference to one dimension, three cues (#15).

Comparison of pre-training and post-training PCIMs for program completed subjects.

The data in Table 28 (p. 34) revealed significant differences along with decreased frequencies in behaviors at the post-test for the nonverbal intrusion, handing an object to the child (#3) and the following verbal interactions: nonquestion suggestions (#8), negative feedback (#10), teaching the class label (#17), naming a specific item or place in the box (#19), providing a specific solution with descriptive information (#20) and a directive with no information (#21). A significant increase was found for postive feedback (#9).

The findings for parents with no previous experience with the PCIM (Table 27) in comparison with parents who had had the PCIM pre- and post-treatment (Table 28) were similar in that significant differences at the post-test mainly involved decreased frequencies in parent behaviors. It was suspected that the diminished behaviors post-treatment may have been related to the effect of maturation. The training program lasted approximately 6-8 months. Therefore, children with pre- and post-training PCIMs were categorized at age at the first test.

Repeated measures analysis of variance on pre- training and post-training PCIM scores for program completed subjects categorized on age are presented in Tables 29-45.

Table 27

Analysis of Variance on Pre-Training PCIM for Program Completed Subjects (n = 84) and Post-Training PCIM for Program Completed Subjects (n = 26) Who Had No Pre-Training PCIM

Source Test Item	df	MS	F	p	Pre-Training PCIM Mean	Pre-Training PCIM SD	Post-Training PCIM Mean	Post-Training PCIM SD
2. Mother's nonverbal intrusions, movement of object.	1/108	52.28/7.97	6.56	.01	2.74	3.12	1.11	1.28
4. Mother's other nonverbal intrusions, e.g. pointing, gesturing.	1/108	246.92/26.54	9.30	.003	7.49	5.38	3.96	4.07
5. Total time.	1/108	27.07/5.89	4.59	.03	4.75	2.54	3.58	1.90
8. Mother's verbal interaction, nonquestion suggestions.	1/108	1920.25/521.97	3.68	.05	41.99	22.31	32.15	23.67
10. Mother's verbal interaction, negative feedback.	1/108	159.90/41.28	3.87	.05	8.61	6.61	5.77	5.49
15. Mother's verbal interaction, suggestion 5, descriptive, reference to one dimension, three cues.	1/108	97.67/14.89	6.56	.01	2.17	3.79	4.38	3.91
21. Mother's verbal interaction, suggestion 11, directive, a specific solution without information.	1/108	329.95/35.78	9.22	.003	6.83	6.28	2.81	4.64

Table 28

Matched Two Tail T-Tests on Pre- and Post-Training PCIM for Program Completed Subjects (n = 51)

Test Item	df	t	p	Pre-Training PCIM Mean	Pre-Training PCIM SD	Post-Training PCIM Mean	Post-Training PCIM SD
3. Mother's nonverbal instrusions, handing an object to child.	50	3.49	.001	1.39	2.50	0.14	0.40
8. Mother's verbal interaction, nonquestion suggestions.	50	2.69	.01	44.31	25.99	34.23	19.91
9. Mother's verbal interaction, positive feedback.	50	2.08	.04	10.23	6.92	12.51	8.38
10. Mother's verbal interaction, negative feedback.	50	2.23	.03	8.98	7.16	6.53	5.92
12. Mother's verbal interaction, suggestion 2, orienting, reference to structure of task involving one dimension, three cues.	50	2.26	.03	.65	1.23	1.29	1.95
17. Mother's verbal interaction, suggestion 7, teaching the class label.	50	2.47	.01	3.70	5.59	1.69	2.72
19. Mother's verbal interaction, suggestion 9, specific item or place in box.	50	2.55	.01	14.00	12.20	9.76	11.67
20. Mother's verbal interaction, suggestion 10, directive, a specific solution which contains some descriptive information about item.	50	2.75	.008	5.70	6.37	3.35	5.05
21. Mother's verbal interaction, suggestion 11, directive, a specific solution without information.	50	2.87	.006	6.25	6.08	3.82	4.03

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Table 29

Item 1: Mother's nonverbal intrusions, placement of object.

Source	df	MS	F	p
Age	2	4.53	.56	NS
Error	48	8.06		
Test Item	1	15.44	4.37	.04
Age x Item	2	9.69	2.74	NS
Error	48	3.53		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	2.37	2.56	19
	2	2.21	2.15	
31-36 mos.	1	1.94	2.23	16
	2	3.87	2.82	
37+ mos.	1	2.62	2.28	16
	2	3.19	2.59	

Table 30

Item 2: Mother's nonverbal intrusions, movement of object.

Source	df	MS	F	p
Age	2	5.97	.85	NS
Error	48	7.04		
Test Item	1	.27	.06	NS
Age x Item	2	23.39	4.98	.01
Error	48	4.69		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	2.89	2.56	19
	2	2.21	2.30	
31-36 mos.	1	1.81	2.43	16
	2	3.62	2.59	
37+ mos.	1	2.62	2.92	16
	2	1.19	1.51	

Table 31

Item 3: Mother's nonverbal intrusions, handing an object to the child.

Source	df	MS	F	p
Age	2	1.43	.45	NS
Error	48	3.18		
Test Item	1	41.76	12.41	.001
Age x Item	2	1.65	.49	NS
Error	48	3.36		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	.95	1.54	19
	2	.16	.50	
31-36 mos.	1	1.62	2.82	16
	2	.06	.25	
37+ mos.	1	1.69	3.09	16
	2	.19	.40	

Table 32

Item 4: Mother's other nonverbal intrusions, e.g. pointing, gesturing.

Source	df	MS	F	p
Age	2	333.84	11.54	.0001
Error	48	28.93		
Test Item	1	1.24	.05	NS
Age x Item	2	70.50	2.62	NS
Error	48	26.85		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	10.31	6.20	19
	2	7.53	6.24	
31-36 mos.	1	8.69	5.29	16
	2	11.56	5.64	
37+ mos.	1	4.44	4.35	16
	2	3.69	2.62	

Table 33

Item 5: Total time of PCIM.

Source	df	MS	F	P
Age	2	412.23	8.05	.001
Error	48	51.19		
Test Item	1	100.49	1.95	NS
Age x Item	2	65.15	1.27	NS
Error	48	51.44		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	5.22	2.81	19
	2	3.83	1.77	
31-36 mos.	1	5.29	3.65	16
	2	5.61	1.84	
37+ mos.	1	3.61	1.38	16
	2	2.78	.98	

Table 34

Item 6: Total number of mother's statements.

Source	df	MS	F	P
Age	2	31276.53	10.88	.0001
Error	48	2873.59		
Test Item	1	1174.56	.69	NS
Age x Item	2	1759.47	1.03	NS
Error	48	1707.96		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	101.58	42.10	19
	2	92.53	56.75	
31-36 mos.	1	106.75	64.54	16
	2	115.75	51.87	
37+ mos.	1	61.87	37.80	16
	2	41.50	19.58	

Table 35

Item 7: Mother's verbal interaction, question suggestions.

Source	df	MS	F	p
Age	2	823.21	5.71	.006
Error	48	144.23		
Test Item	1	45.41	.45	NS
Age x Item	2	150.82	1.51	NS
Error	48	100.00		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	12.37	12.66	19
	2	10.95	10.67	
31-36 mos.	1	12.31	10.36	16
	2	18.56	16.41	
37+ mos.	1	5.81	4.98	16
	2	5.00	7.15	

Table 36

Item 8: Mother's verbal interaction, nonquestion suggestions.

Source	df	MS	F	p
Age	2	6586.82	14.00	.0001
Error	48	470.35		
Test Item	1	2613.94	7.06	.01
Age x Item	2	67.84	.18	NS
Error	48	370.38		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	47.00	21.99	19
	2	39.53	17.71	
31-36 mos.	1	55.69	30.06	16
	2	45.75	19.75	
37+ mos.	1	29.62	19.95	16
	2	16.56	6.45	

Table 37

Item 9: Mother's verbal interaction, positive feedback.

Source	df	MS	F	P
Age	2	330.70	4.26	.02
Error	48	77.53		
Test Item	1	133.04	4.54	.03
Age x Item	2	61.06	2.09	NS
Error	48	29.27		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	11.00	7.35	19
	2	13.00	8.14	
31-36 mos.	1	11.56	7.78	16
	2	16.75	9.20	
37+ mos.	1	8.00	5.14	16
	2	7.69	5.08	

Table 38

Item 10: Mother's verbal interaction, negative feedback.

Source	df	MS	F	P
Age	2	290.25	6.35	.004
Error	48	45.68		
Test Item	1	138.83	4.51	.03
Age x Item	2	33.01	1.07	NS
Error	48	30.76		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	11.16	6.89	19
	2	6.95	5.41	
31-36 mos.	1	9.87	7.26	16
	2	9.56	6.96	
37+ mos.	1	5.50	6.43	16
	2	3.00	3.18	

Item 12: Mother's verbal interaction, suggestion 2, orienting, reference to structure of task involving two dimensions, three cues.

Source	df	MS	F	P
Age	2	8.70	2.90	NS
Error	48	3.00		
Test Item	1	11.18	5.18	.02
Age x Item	2	.62	.29	NS
Error	48	2.16		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	.31	.67	19
	2	.68	1.33	
31-36 mos.	1	1.06	1.73	16
	2	1.94	2.84	
37+ mos.	1	.62	1.09	16
	2	1.37	1.26	

Table 40

Item 13: Mother's verbal interaction, suggestion 3, orienting, reference to structure of task involving one cue.

Source	df	MS	F	P
Age	2	162.42	4.56	.01
Error	48	35.62		
Test Item	1	.08	.001	NS
Age x Item	2	12.84	.29	NS
Error	48	44.29		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	6.21	4.05	19
	2	6.79	4.08	
31-36 mos.	1	8.56	11.64	16
	2	9.31	7.04	
37+ mos.	1	5.19	4.71	16
	2	3.69	2.98	

Item 16: Mother's verbal interaction, suggestion 6, descriptive, reference to one cue.

Source	df	MS	F	p
Age	2	151.91	3.23	.04
Error	48	47.05		
Test Item	1	.47	.02	NS
Age x Item	2	2.96	.14	NS
Error	48	21.09		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	6.63	5.47	19
	2	7.16	7.57	
31-36 mos.	1	9.00	8.20	16
	2	8.56	5.34	
37+ mos.	1	4.69	2.62	16
	2	4.19	3.25	

Table 42

Item 17: Mother's verbal interaction, suggestion 7, teaching the class label.

Source	df	MS	F	p
Age	2	50.43	2.46	NS
Error	48	20.48		
Test Item	1	104.47	5.93	.01
Age x Item	2	2.24	.13	NS
Error	48	17.60		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	3.74	4.44	19
	2	1.89	3.53	
31-36 mos.	1	5.19	6.97	16
	2	2.56	2.47	
37+ mos.	1	2.19	5.20	16
	2	.56	1.21	

Table 43

Item 19: Mother's verbal interaction, suggestion 9, descriptive, specific item only or one specific place in box.

Source	df	MS	F	P
Age	2	1452.37	8.90	.001
Error	48	163.20		
Test Item	1	429.69	5.97	.01
Age x Item	2	26.60	.37	NS
Error	48	71.94		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	18.84	14.29	19
	2	12.74	7.93	
31-36 mos.	1	16.62	10.56	16
	2	13.62	16.86	
37+ mos.	1	5.62	5.25	16
	2	2.37	2.96	

Table 44

Item 20: Mother's verbal interaction, suggestion 10, directive, a specific solution which contains some descriptive information about item.

Source	df	MS	F	P
Age	2	241.13	6.15	.004
Error	48	39.21		
Test Item	1	140.53	7.21	.01
Age x Item	2	.29	.01	NS
Error	48	19.48		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	7.47	7.23	19
	2	5.16	5.19	
31-36 mos.	1	6.69	6.78	16
	2	4.50	5.95	
37+ mos.	1	2.62	3.36	16
	2	.06	.25	

Item 21: Mother's verbal interaction, suggestion 11, directive, a specific solution without information.

Source	df	MS	F	P
Age	2	173.06	5.92	.005
Error	48	29.22		
Test Item	1	150.65	7.93	.007
Age x Item	2	.10	.005	NS
Error	48	19.00		

Age Groups	Test	Mean	SD	n
24-30 mos.	1	7.84	6.10	19
	2	5.53	5.06	
31-36 mos.	1	7.00	6.77	16
	2	4.50	3.16	
37+ mos.	1	3.62	4.64	16
	2	1.12	1.20	

When the subjects were categorized on age, significant differences in pre- and post-test scores were found for the nonverbal intrusions, placement of objects (#1) and handing an object to the child (#3) and for verbal interactions, reference to structure of task involving two dimensions, three cues (#12) and teaching the class label (#17). Age related differences were significant for the following items: other nonverbal intrusions (#4), time (#5). number of mother's statements (#6), question suggestions (#7), reference to structure of task involving one cue (#13) and descriptive, reference to one cue (#16). Paternal behaviors decreased over time for items 4-7 with the youngest and oldest age groups; in contrast, increased behaviors were reported for the middle age group who had been treated similarly to the youngest group at the pre-test. Significant differences were found for both test scores and age for nonquestion suggestions (#8), positive feedback (#9), negative feedback (#10), descriptive, specific item only (#19), directive, a specific solution which contains some descriptive information about item (#20) and directive, a specific solution without information (#21). Nonquestion suggestions and negative feedback decreased at the post-test for both age and test scores, while positive feedback increased for the younger and middle age groups and remained the same for the oldest group. Differences in parent behaviors appeared to be age specific with decreases noted at the post-test for the youngest and oldest age groups while increases occurred for the middle age group. There was only one significant interaction for the nonverbal intrusion, movement of objects (#2), Table 30. No significant interactions were found for all other variables analyzed.

Finally, subjects were categorized on sex as pre-post IQ scores had revealed significant differences favoring the girls.

Repeated measures analysis of variance on pre-training and post training PCIM scores for program completed subjects categorized on sex are presented in Tables 46-53.

Table 46

Item 3: Mother's nonverbal intrusions, handing an object to child.

Source	df	MS	F	p
Sex	1	8.75	2.92	NS
Error	49	2.99		
Test Item	1	30.55	9.63	.003
Sex x Item	1	9.37	2.95	NS
Error	49	3.17		

Sex	Test	Mean	SD	n
Male	1	1.87	2.98	31
	2	.13	.34	
Female	1	.65	1.18	20
	2	.15	.49	

Table 47

Item 8: Mother's verbal interaction, nonquestion suggestions.

Source	df	MS	F	p
Sex	1	2549.59	3.76	.05
Error	49	677.56		
Test Item	1	2651.82	7.29	.009
Sex x Item	1	102.82	.28	NS
Error	49	363.49		

Sex	Test	Mean	SD	n
Male	1	47.48	25.59	31
	2	39.10	20.15	
Female	1	39.30	26.59	20
	2	26.80	17.40	

Table 48

Item 9: Mother's verbal interaction, positive feedback.

Source	df	MS	F	p
Sex	1	65.48	.74	NS
Error	49	88.11		
Test Item	1	123.35	3.96	.05
Sex x Item	1	.25	.008	NS
Error	49	31.16		

Sex	Test	Mean	SD	n
Male	1	10.84	7.28	31
	2	13.19	8.90	
Female	1	9.30	6.38	20
	2	11.45	7.62	

Table 49

Item 10: Mother's verbal interaction, negative feedback.

Source	df	MS	F	p
Sex	1	159.10	2.98	NS
Error	49	53.35		
Test Item	1	142.88	4.54	.03
Sex x Item	1	.37	.01	NS
Error	49	31.47		

Sex	Test	Mean	SD	n
Male	1	10.03	7.19	31
	2	7.48	5.86	
Female	1	7.35	6.97	20
	2	5.05	5.85	

Table 50

Item 17: Mother's verbal interaction, suggestion 7, teaching the class label.

Source	df	MS	F	p
Sex	1	75.49	3.68	.061
Error	49	20.58		
Test Item	1	81.41	4.80	.03
Sex x Item	1	18.82	1.11	NS
Error	49	16.95		

Sex	Test	Mean	SD	n
Male	1	4.74	6.34	31
	2	2.03	2.63	
Female	1	2.10	3.78	20
	2	1.15	2.85	

Table 51

Item 19: Mother's verbal interaction, suggestion 9, descriptive, specific item only or one specific place in box.

Source	df	MS	F	p
Sex	1	556.24	2.68	NS
Error	49	207.80		
Test Item	1	393.89	5.54	.02
Sex x Item	1	23.11	.32	
Error	49	71.09		

Sex	Test	Mean	SD	n
Male	1	16.26	13.51	31
	2	11.26	13.19	
Female	1	10.50	9.05	20
	2	7.45	8.61	

Table 52

Item 20: Mother's verbal interaction, suggestion 10, directive, a specific solution which contains some descriptive information about item.

Source	df	MS	F	P
Sex	1	214.26	4.88	.03
Error	49	43.88		
Test Item	1	124.59	6.55	.01
Sex x Item	1	4.16	.22	NS
Error	49	19.01		

Sex	Test	Mean	SD	n
Male	1	7.03	7.07	31
	2	4.35	5.65	
Female	1	3.65	4.51	20
	2	1.80	3.51	

Table 53

Item 21: Mother's verbal interaction, suggestion 11, directive, a specific solution without information.

Source	df	MS	F	P
Sex	1	97.02	2.88	NS
Error	49	33.71		
Test Item	1	131.79	7.12	.01
Sex x Item	1	5.56	.30	NS
Error	49	18.50		

Sex	Test	Mean	SD	n
Male	1	7.22	6.03	31
	2	4.42	4.32	
Female	1	4.75	6.01	20
	2	2.90	3.43	

Significant differences related to sex were found for nonquestion suggestions (#8) and a directive which contains some descriptive information about the item (#20). There were significantly more behaviors directed toward the boys, however, significant decreases in behaviors at the post-training were found for parents of both boys and girls.

Table 54, p. 49, was constructed to compare responses to the PCIM for all variables across analyses.

Discussion

The PCIM, a semi-structured task was expected to pick up differences in maternal behaviors pre- and post-training. Before the findings are discussed a brief description of the Parent Education Program is relevant. It emphasized the importance of the parent using rational explanations rather than imperatives while teaching her child the cognitive concepts inherent in the play activities. In addition, the use of positive reinforcement as a learning incentive was stressed.

The data to be discussed are for subjects with both pre-and post-training tests. Suggestions went from high information value, #11, to low information value. #22. A significant decrease in negative feedback, #10, coupled with significant decreases in low information suggestions, items 19, 20 and 21, implied that program experiences may have taught parents what not to do. Whereas, the significant increase found for positive feedback, #9, indicates that parents applied the idea of using praise to encourage wanted behaviors. A closer inspection of the data on positive feedback (Table 35) revealed that increased praise occurred only with the two younger age groups while there was essentially no difference noted for the oldest age group. Similar findings occurred on other items for the older children with significantly fewer parental behaviors reported for this group on both the pre- and post-tests for time of task administration (#5) and number of statements by the parent (#6). It appeared that there were differential responses to the PCIM related to the age of the child. Earlier it was mentioned that children in the middle age group were the most difficult to test. It was of interest to find that on the PCIM they consistently received more attention from their parents than children in the other two age groups. The response rate to this group was generally higher on both tests as compared with the youngest group. Even the decrease in maternal behaviors observed at the post-test tended to be less for the middle age group than for the other two groups of children.

There are other factors to consider in discussing the use of the PCIM as an assessment of an intervention program mediated through the parent. First, PCIM categories were theoretical and were not related to the context of the task. Second, children mature over time. Further, at ages two and three marked behavioral changes take place in short time periods in contrast to more sustained developmental changes that occur in later years. Third, the parent and child were more relaxed at the post-training test, particularly, those who had had the PCIM pre-training. This may have caused parents to use shortcuts and teaching styles that were more individually oriented rather than follow the demonstrator's guidelines as many did at the pre-training PCIM. Another possible explanation for changes in the parent's teaching styles, in addition to their program experiences, may have been the increased maturity of the child. Fourth, the breakdown of items 7 and 8 into more discrete categories in items 9-22 probably increased the expected variability and may partially explain the large standard deviations.

It appears that the PCIM which was scored quantitatively did not get at qualitative issues that may have been more reflective of the parent training such as the mother's increased awareness of her ability to teach her child. The scoring guidelines were derived from a task performed once once, whereas, in this study the toy sorting task was administered two times. Under these conditions the expected imitation of the experimenter's instructions to the parent should possibly have been controlled by the scoring

Item No. 12

Table 54

Comparisons of Significant Differences on the PCIM from Tables 27-53

Item	ANOVA Pre, n = 84 Post, n = 26	Matched T Test n = 51	Repeated Measures ANOVA Age	Test	Interaction	Repeated Measures ANOVA Sex	Test	Interaction
1				*				
2	**				**			
3		**		**			**	
4	**		**					
5	*		**					
6			**					
7			**					
8	*	**	**	**		*	**	
9		*	*	*			*	
10	*	*	**	*			*	
11								
12		*		*				
13			**					
14								
15	**							
16			*					
17		**		**			*	
18								
19		**	**	**			*	
20		**	**	**		*	**	
21	**	**	**	**			**	
22								

* = Significant at the .05 level.
** = Significant at the .01 level.
Blank = NS

procedures. As discussed above, at the initial testing parents closely imitated the experimenter's teaching style while at the post-training test their behaviors were individually oriented and more innovative. The elimination of variables directly affected by task demonstration and procedures along with the age of the child would make the PCIM a more valid measure of the treatment variable. Items that tapped program related outcomes, such as, positive and negative reinforcement would be retained. Simplifying the scoring procedures would permit additional measures that are more applicable to the research hypotheses of the program. A revised system of recording non-verbal behaviors for both mother and child along with a "Book Task" were developed to deal with the limitations of the PCIM. This material is is the Appendix. It was not possible to complete pilot testing of these measures but preliminary findings suggested that they had the potential to validly assess the effects of the intervention program. In summary, it appears that the theoretical orientation of the PCIM did not measure certain maternal behaviors that appeared to be a valuable by-product of the Parent Education Program. Specifically, these behaviors reflected the parent's changing view of her role to include "child-educator" which emanated from increased knowledge about affective as well as cognitive aspects of early development.

Parent attitude measures

A series of open-ended questionnaires were constructed to obtain information about the impact of the educational intervention program on the parent along with their views of child development, early learning and child rearing practices. The forms were available in both English and Carribean Spanish. In rating responses to questions each category mentioned was counted and then computed in the total frequency. Only responses greater than 20% will be discussed. The data will be presented as follows: 1) Prenatal Questionnaire; 2) Parent's Post-Training Comments; 3) Parent Attitude Scale; 4) discussion.

Prenatal Questionnaire.

This form was developed to tap the expectant mother's views of the needs and abilities of the infant. Initially it was distributed to women waiting in the prenatal clinic and on the in-patient obstetric floor of the Mount Sinai Hospital. Later, to see if there were differences in the perception of the infants needs that related to the mother's status it was given to parents in the waiting room of the well baby clinic who were not participants in the Parent Education Program. Hospital regulations required that volunteers give no personal information therefore, the description of the sample population is based on the clinical observations of the experimenter. The clientele attending the prenatal clinic were drawn from the same population as the intervention project; however, on the maternity floor there appeared to be a mix of approximately one-fourth middle-income private patients and the others were from the clinic.

The experimenter asked the waiting women to fill out the questionnaires as we wanted to find out what they thought was most important for a baby. They were assured that the information given was confidential as no names were given. After the questionnaire was completed it was folded in half so that the writing was not visible and it was returned to the experimenter. Parents were cooperative as they appeared to be flattered by our interest in their opinions. Filling out the form also helped to make the waiting time go faster. The number of refusals was minimal and it was suspected that illiteracy may have been the reason rather than disinterest.

An obvious problem in recruiting subjects in an open area is that there is a chance of contamination because of the possibility of the clients discussing the answers to the items. Volunteers were asked not to discuss the items until after they finished filling out the form. This inadverdently proved to be a way of saving face for women who were illiterate and returned blank forms. It was found that subjects did not talk to one another while answering the questions but after completing the forms they chatted with

their neighbors about why we would be interested in how babies learn. On the obstetric unit patients were in two and four bed rooms so it is possible that discussions took place when the experimenter left the room. The findings are presented in Tables 1-5. The questions follow: 1) What is most important for a baby?
2) Can a baby learn?
3) What can a baby do?
4) Who teaches a baby?

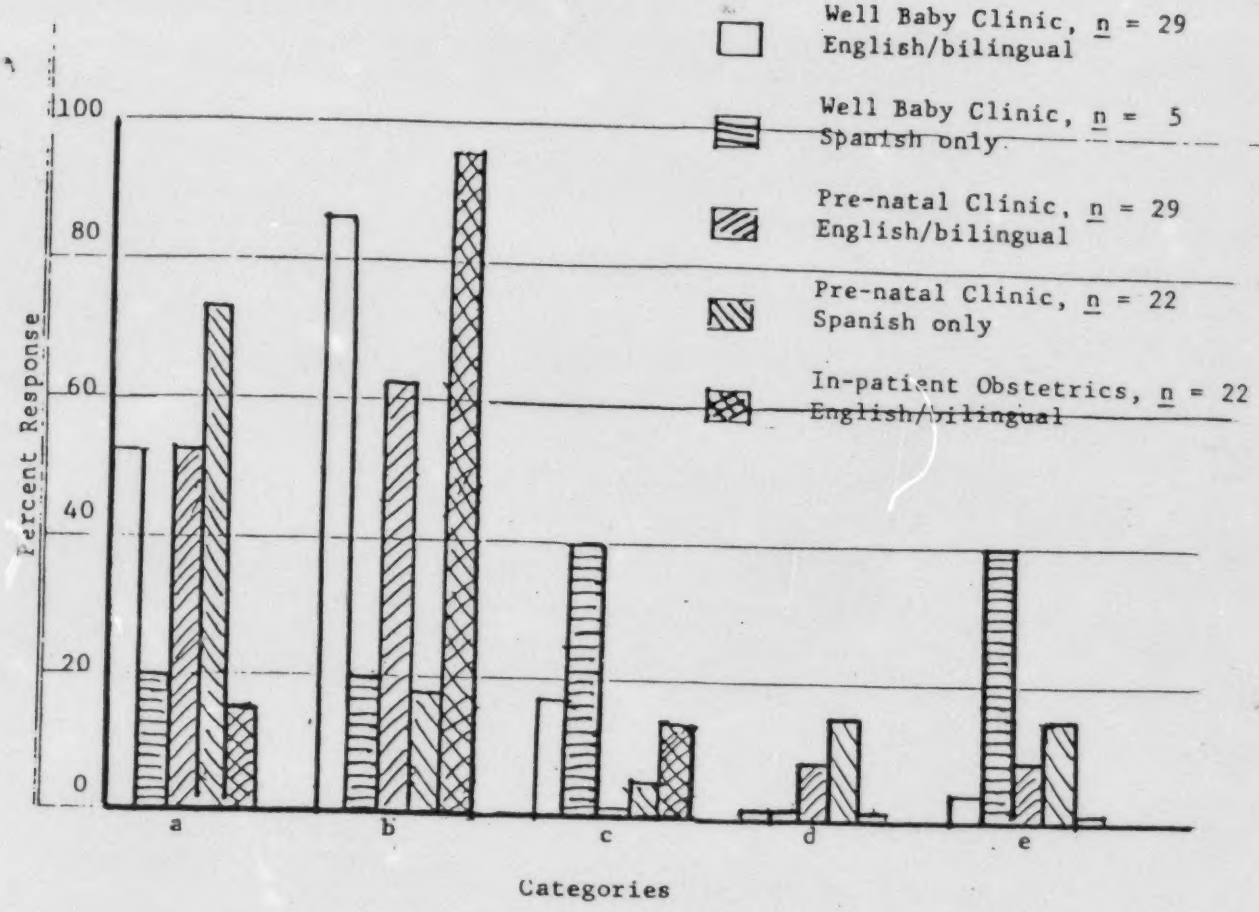

Fig. 1.---Comparison of responses to question 1: What is most important for a baby?
a. physical care, good health, food, clothing, clean home;
b. emotional security, love, patience, understanding;
c. sensory environment, stimulation, encouraged to explore, play;
d. social requirements, good education, manners, material goods;
e. no response.

In response to question 1, English/bilingual parents in both the well baby and prenatal clinics rated emotional security first and then physical care as the primary needs of the infant; whereas, Spanish speaking parents in the prenatal clinic clearly valued physical care over emotional security. In contrast, postpartum women saw emotional security as the most important need of the baby rating it 96%. The responses of the Spanish speaking parents in the well baby clinic were distributed across categories, however, these findings must be interpreted with caution because of the small sample size (n = 5).

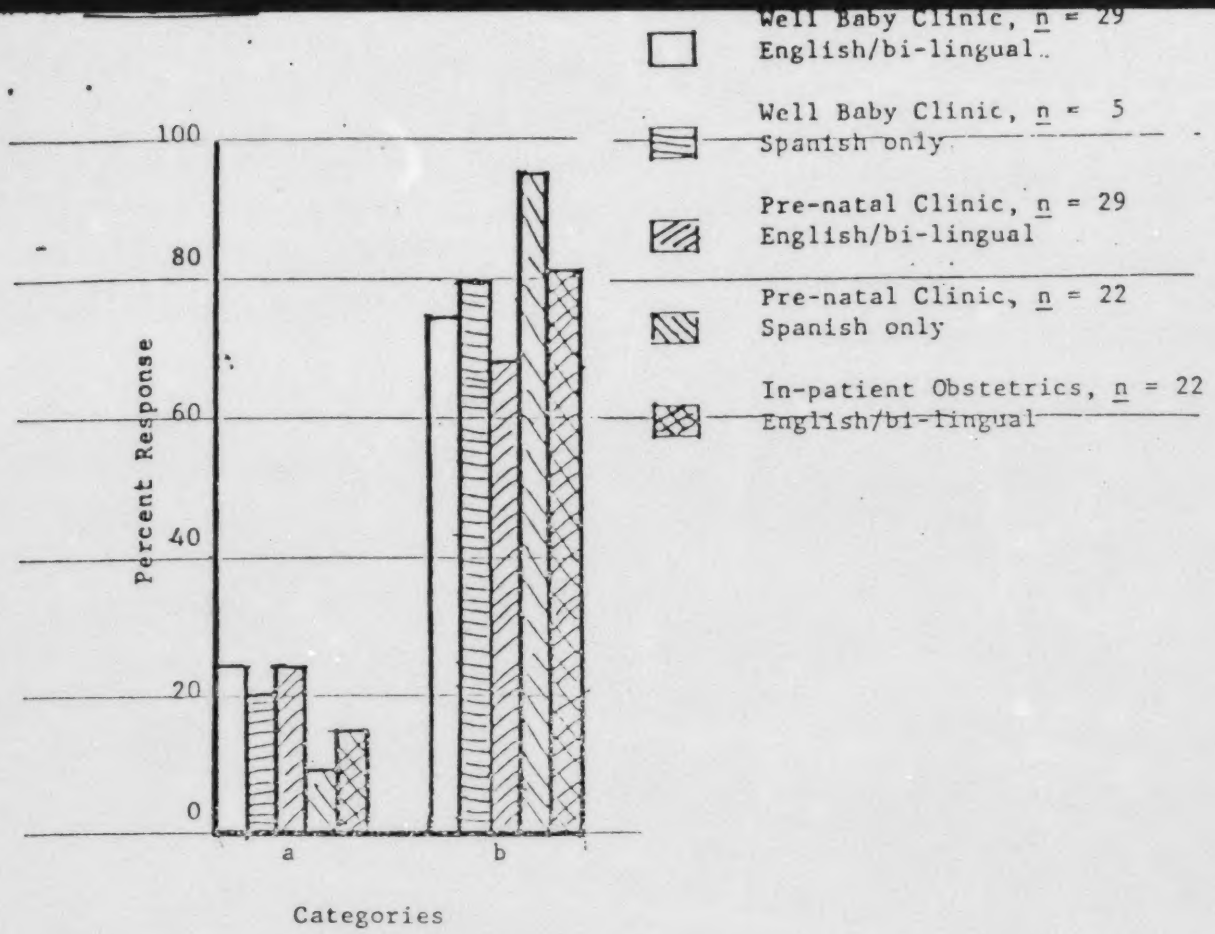

Fig. 2.---Comparison of responses to question 2: Can a baby learn?
a. yes, if taught, by outside agent, e.g. parent, siblings;
b. yes, emanates from self, watch, imitate, they are curious.

The findings in Figure 2 are similar across groups and indicate that parents in the population under study perceived the baby's capacity for learning to be largely self initiated.

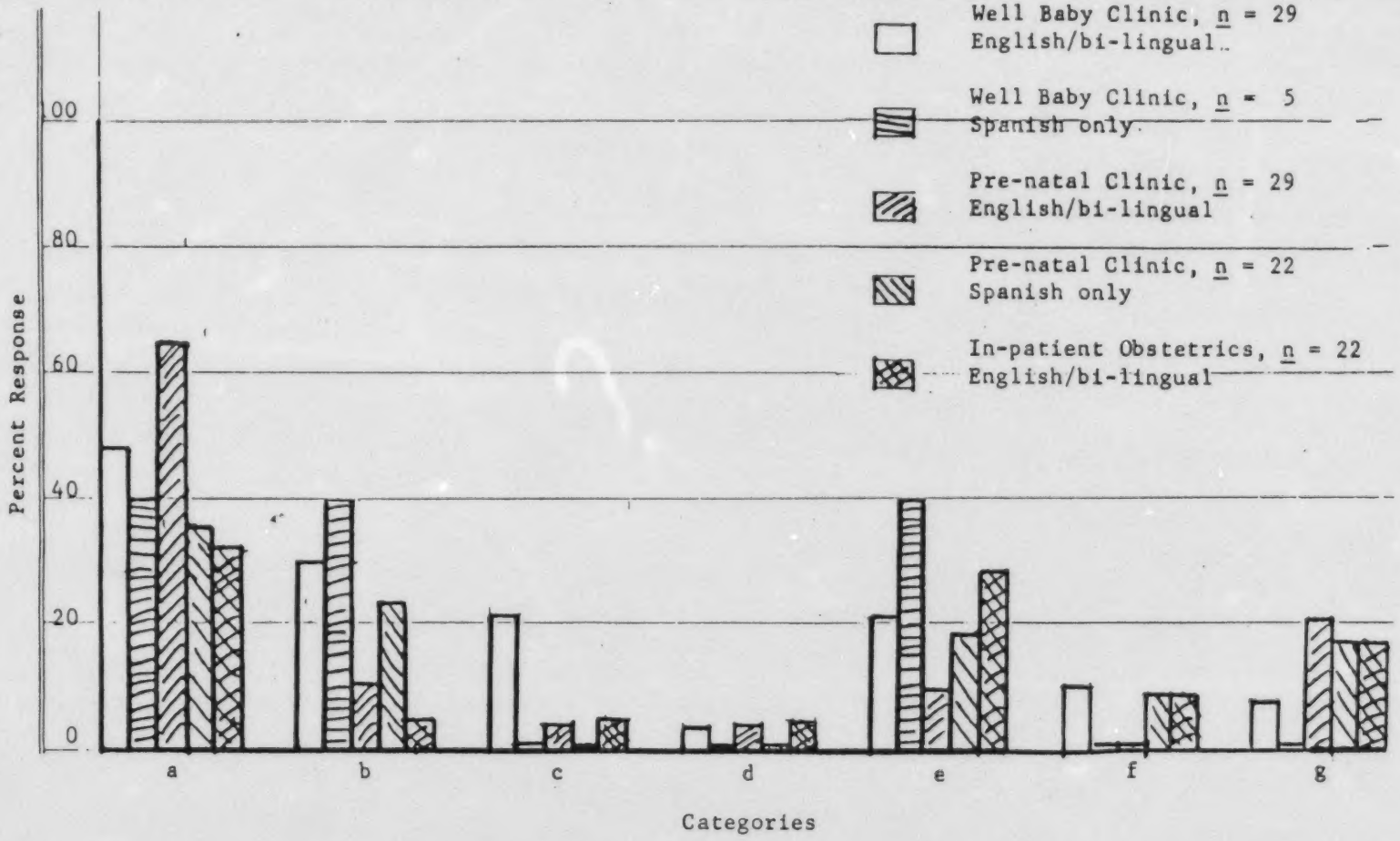

Fig. 3.---Comparison of responses to question 3: What can a baby do?

a. physical skills, crawl, walk, eat, hold bottle, sit up, cry;
b. social skills, smile laugh, learn to behave, learn meaning of danger, play, respond to physical and emotional environment;
c. verbal and pre-verbal skills, make sounds, communicate, talk, (think);
d. affect parents, make parents happy, bring parents together.
e. somethings, non-specific, what parents teach him, watch other children, activities suitable for age;
f. most everything;
g. no response, nothing.

Item No. 12

The categorization of the baby's abilities revealed that parents rated physical skills highest followed by social skills and then non-specific activities. The development of verbal and pre-verbal skills, which would be considered to be a cognitive ability, was mentioned only by 22% of English/bilingual parents in the well baby clinic. It appears that the majority of the population thought of the baby's activities in physical and social terms and did not link these up with the concurrent development of the intellect.

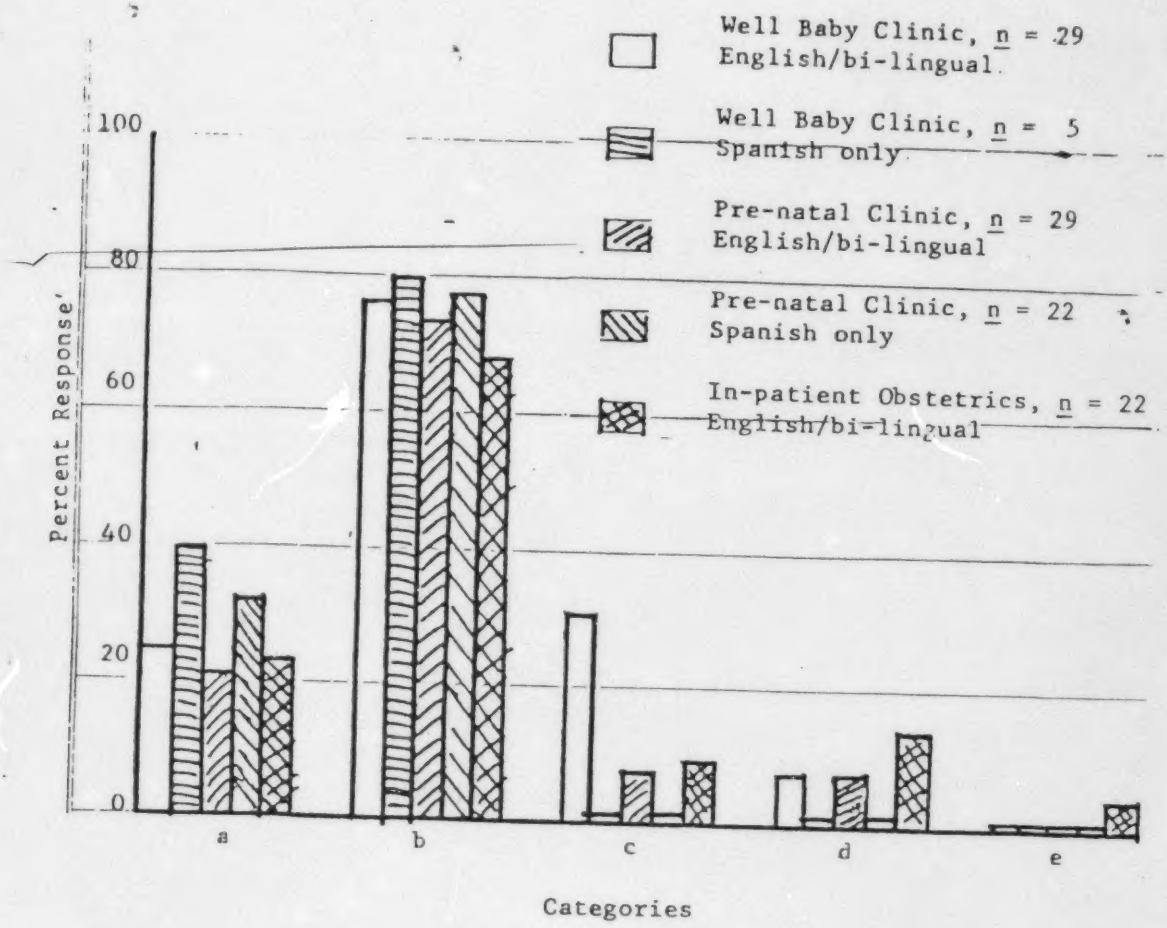

Fig. 4.---Comparison of responses to question 4: Who teaches a baby?
- a. mother;
- b. family, father, older siblings, parents;
- c. self taught;
- d. environment, educational toys;
- e. no response.

The answers to question 4 indicate that respondents saw the family as the baby's primary teacher followed by the mother. However, 32% of the English/bilingual parents in the well baby clinic mentioned the initiative of the child as a factor in teaching the baby.

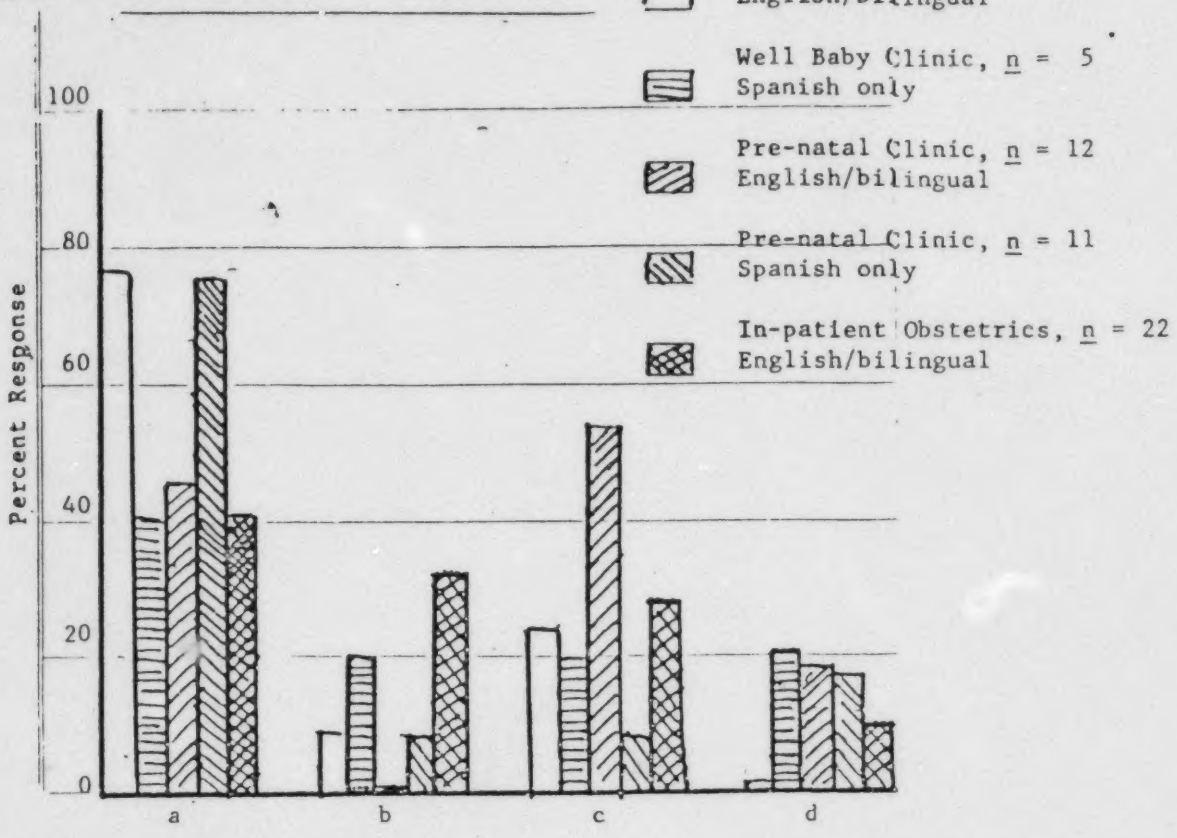

Fig. 5.---Comparison of responses to question 5: How does a baby learn?

a. acted upon by others, taught by mother, older siblings, parents, everyone;stimulation, patience, reinforcement;
b. baby's actions: sensory experiences, feeling, touching, seeing, hearing, exploring, maturing;
c. baby's actions: observing behaviors, watching, imitating;
d. no response.

In concert with the findings in Figure 4 over 40% or more of the parents across groups rated the actions of others as having a major effect upon how the baby learns. However, the actions of the baby in both categories b and c were rated over 20% by the maternity patients. English/bilingual parents in the well baby and prenatal clinics also saw the baby's actions as a factor in their acquisition of learning skills and rated the babies observing behaviors above the twentieth percentile.

Parent's Post-Training Comments

This form was constructed to quantify the clinical and anecdotal information reported by the staff about the parents perception of the program and its effect upon their children. It was given to program completed parents at the 12th session and returned at the post-training evaluation. Illiterate parents arranged to dictate their answers to their trainers. Subjects were categorized by the sex and ethnicity of their children and the language used in answering the questions. In discussing the results the parent groups will be identified by the sex, ethnicity and language listing in the key. This form is in the Appendix.

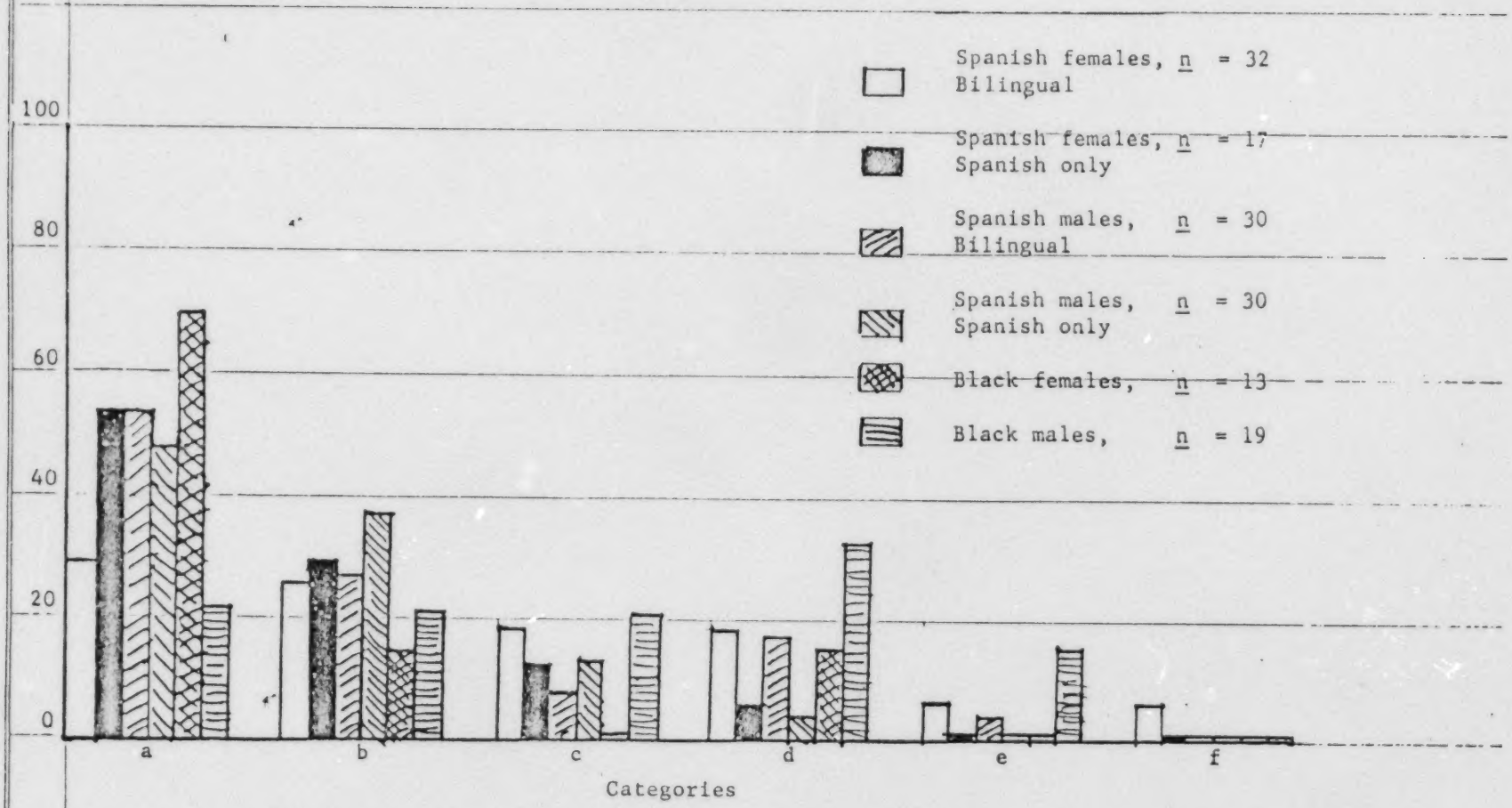

Fig. 6.---Comparison of responses by parents who completed the program to question 1: Why did you join the program?

a. help child learn, good for child, good program;
b. prepare child for school, activate the mind;
c. effect upon parent, teach her to teach child, improve parent-child relationship;
d. asked to join program, heard about program, curious, interested, came to hospital anyway;
e. specific learning skills for child, learn shapes, colors, etc., how to play, how to get along with other children;
f. no response, not able to code response.

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Item No. 12

The findings in Figure 6 clearly indicate that most parents viewed the program as a way to help their children learn with four groups rating this category over 40% while Spanish/bilingual females and Black males rated it a little over 20%. The next reason for joining the program was to prepare the children for school which was rated at over 20% for all groups with the exception of Black females. Black males showed the greatest variability across categories as 20% also mentioned their own needs for entering the program (category c) while 32% reported they entered the program because they were asked to do so.

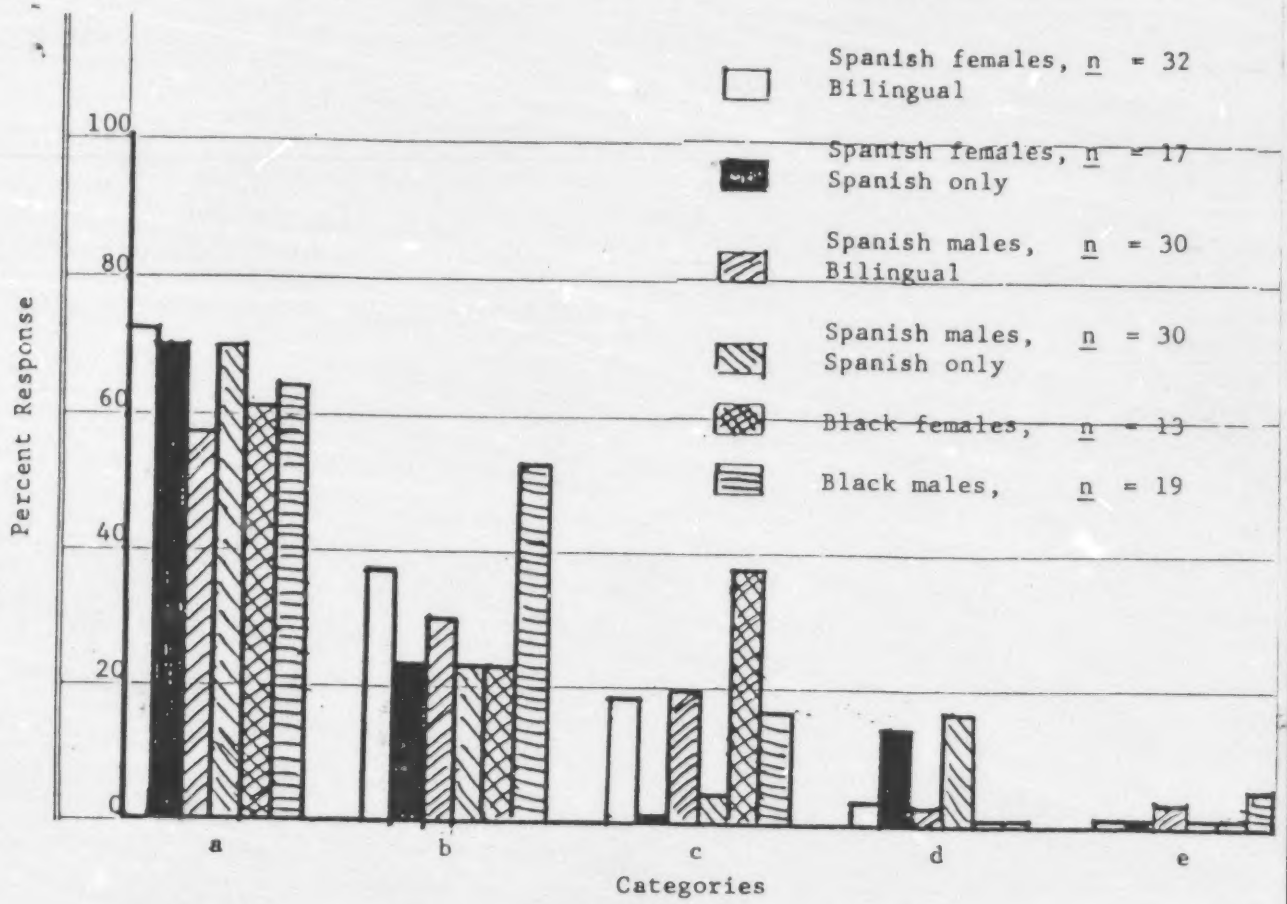

Fig. 7.---Comparison of responses by parents who completed the program to question 2: What does your child do now that he did not do before the program?

a. skills related to content of Parent Education Program, knows shapes, colors, etc.
b. behavioral changes, plays better with toys, learned to share; speech more expressive, speaks more clearly, follows instructions;
c. intellectual changes, aroused curiosity, more aware of environment, handles advanced play materials, reads books;
d. general gain in learning, knows more than before, smart;
e. no change, response unrelated to question.

In rating the effects of the Parent Education Program on the child about 60% of the parents in all groups mentioned skills directly derived from program activities. Next parents in all groups noted that behavioral changes occurred with Black males rating this category at 53%. Some parents also mentioned intellectual differences which were 37% for Black females and 20% for Spanish/bilingual males.

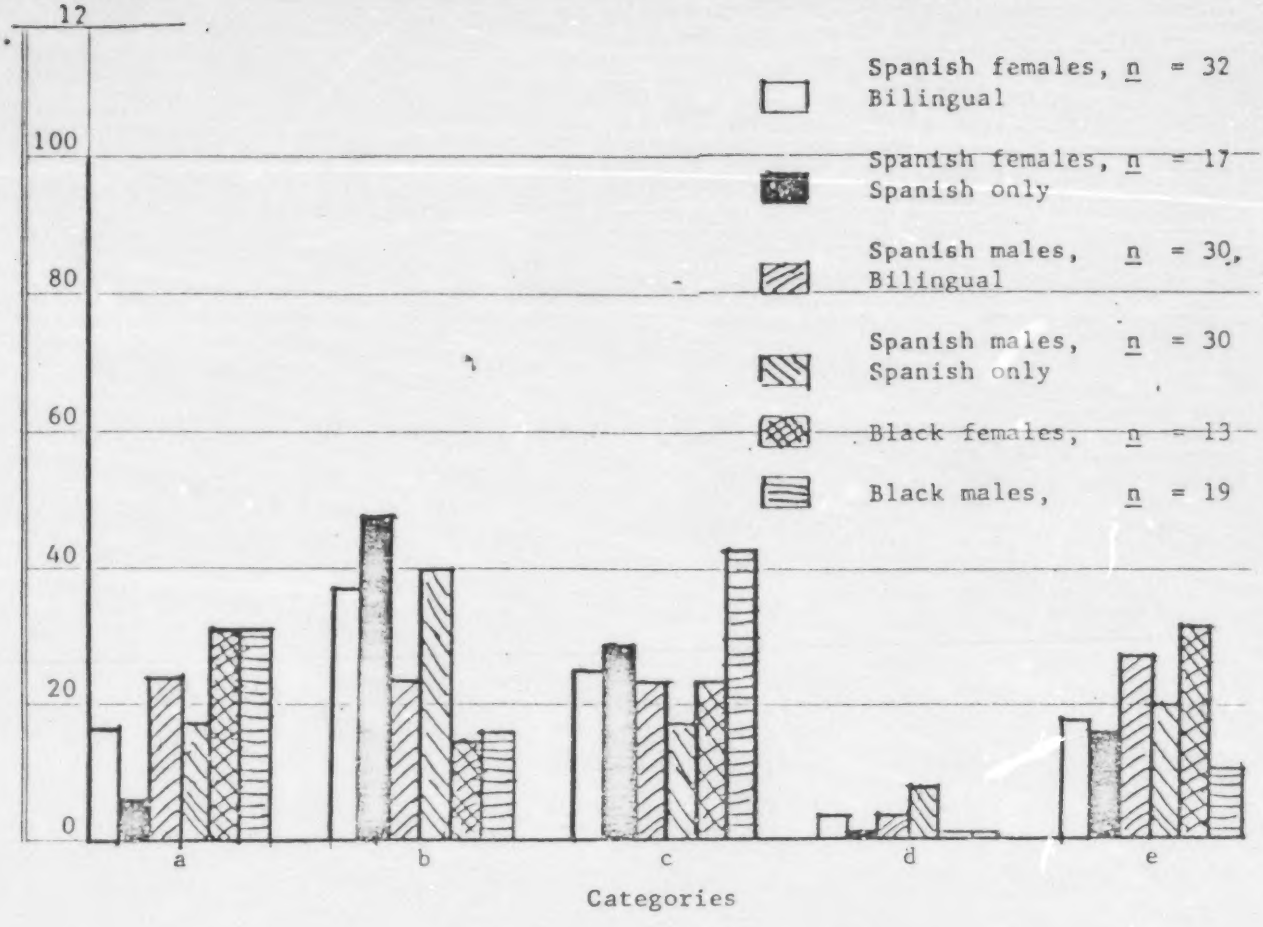

Fig. 8.---Comparison of responses by parents who completed the program to question 3: How do you think the program can be improved?

a. suggested changes in format of Parent Education Program, more observations of parent teaching child, staff member to work directly with child, increase time for parent to teach exercise, allow to keep toys, children to come in just to use playroom, standardize colors to facilitate teaching, simpler books;
b. extend and/or expand program, increase number of parent participants, increase sites for teaching parents, lengthen teaching program to include older and younger children;
c. program is fine as it is, no changes suggested;
d. increased cooperation on part of parents, spend more time with children;
e. no response, not able to code response.

The responses to question 3, Figure 8, were variable with the Spanish parents asking for additional program experiences while, in contrast, the Black parents were more concerned with bringing about changes in the administration of the program. Spanish/bilingual males were also over the twentieth percentile for category a. All sub-groups, with the exception of Spanish speaking males, rated category c above 20% which indicated that many parents found the program satisfactory in its present state. The percentage of no responses, category e, was highest for question 3 with both Spanish males and Black females responding at the twentieth percentile or above.

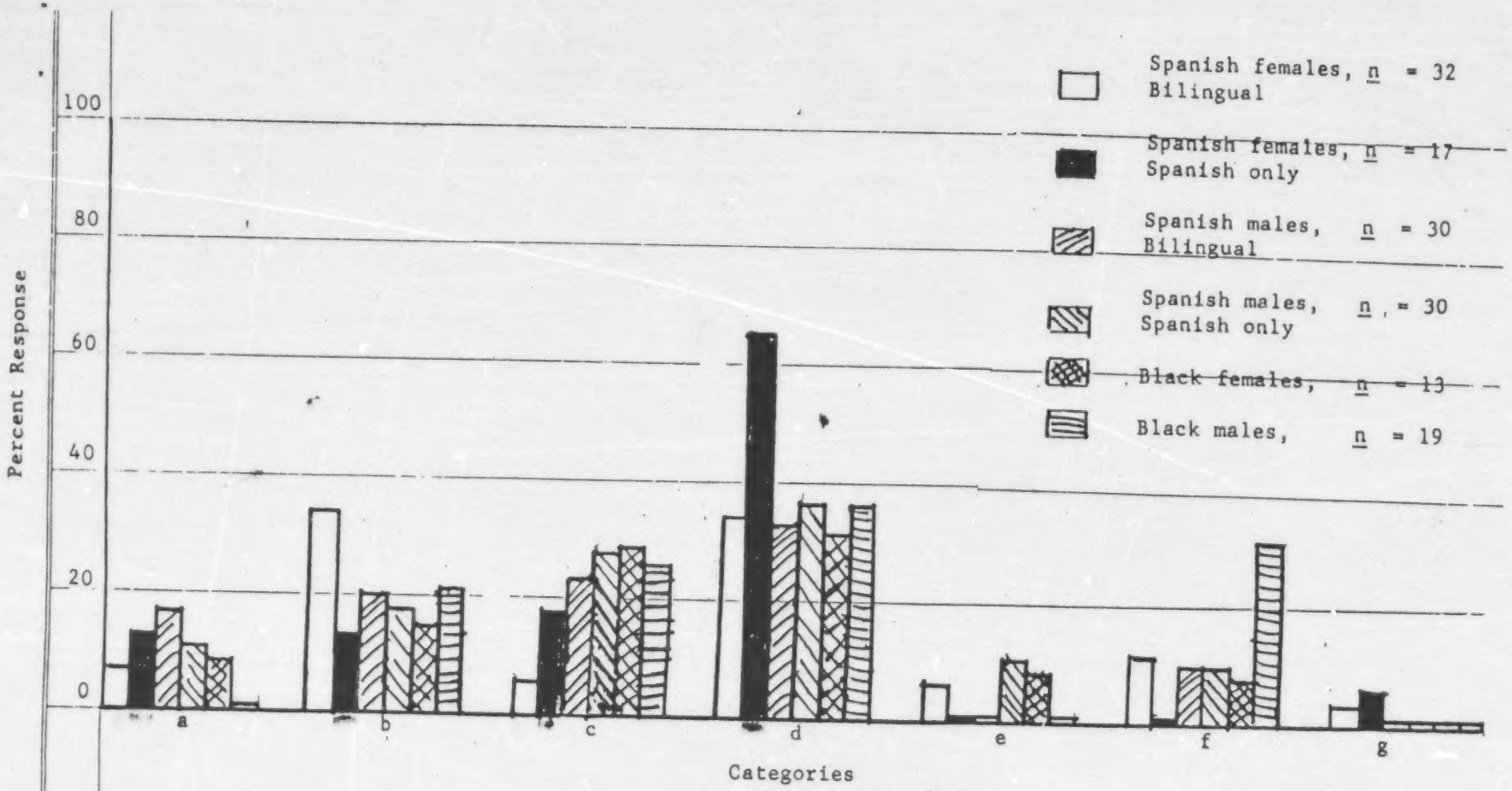

Fig. 9.---Comparison of responses by parents who completed the program to question 4: Do you feel the program helped your child?

a. behavioral changes, behaves better, gets along with other children, shares toys, more independent, more confident, talks more;
b. learning skills specifically related to Parent Education Program curriculum;
c. specific cognitive changes, increase in attention span, aroused interest in learning at an early age, asks more questions, intellectually prepared for school;
d. general improvement, child learned things he did not know, smarter, "yes";
e. child liked program materials;
f. parent learned about teaching child, what kinds of toys to buy, gained pride in teaching skills;
g. no response.

Question 4 was a variation of question 2. It was expected to pick up some of the affective changes that parents mentioned when working with their trainers. In looking at the data in Figure 9 it is of interest to note that behavioral changes were rated quite low, whereas, the highest response rate was for category d, which covered non-specific gains. The heading for the category of general improvement does not connote the warmth and pleasure expressed by parents, particularly, the Spanish speaking respondents, at the progress demonstrated by their children. There were responses above the twentieth percentile in the following categories: Spanish/bilingual females and males and Black males mentioned skills emanating from the program experiences; all groups with the exception of Spanish females reported specific cognitive changes in the children; and parents of Black males pointed out that they had learned from the program too.

Parent Attitude Scale.

This form was designed to obtain information about program effects upon parent behaviors as well as their notions about child rearing. Several questions from the Parent's Post-Training Comments form were repeated as parents reported they had had problems expressing themselves in written form. The Parent Attitude Scale was dictated to bilingual interviewers at the post-training or post-post training evaluation. It is available in the Appendix. At the time of the interviews children in the study ranged from 3-5 years of age. The number of subjects follows: Spanish females, 28; Spanish males, 29; Black females, 8; Black males, 17. Preliminary trends will be discussed.

The first question dealt with when and how learning occurs. Most parents thought that children began to learn between 1-1½ years of age. The reasons for learning beginning at a particular time fell largely into two categories, first, parents, siblings and adults began to give the baby attention and second, the child became "ready" in terms of having the ability to attend or reaching a state of awareness. Approximately 90% said the baby learned from them while 50% of the parents mentioned the initiative of the child in the learning process.

Question 2 concerned their ideas about when children should be allowed to talk and to whom. Most respondents with the exception of parents of Black males said children should not talk while adults were visiting while the latter gave an equal number of positive and negative responses. When asked if children should talk mostly to children there were a similar number of positive and negative replies from all but the Black males who had a greater number of negative responses. Finally, talking at the dinner table led to a similar breakdown of "yes's" and "no's" from all but Black males who were strongly affirmative and felt it was alright for the boys to talk when eating.

Question 3 asked parents about their use of praise. It was revealed that most of them began to praise their children between birth and 1½ years of age. More praise was given to girls than boys, across ethnic groups. Behaviors that elicited praise were cognitive skills, helping in the house and self care, in that order. Praise was usually dispensed by the mother and father while punishment appeared to be the province of the mother. Punishment (Question 4) was instituted later than praise, from 1-2½ years, the period when the child was becoming more independent and assertive. Obviously, this question was more difficult for parents to handle than some others. Therefore, it was not possible to accurately gauge how much punishment was dispensed as many parents discussed methods of punishment rather than the amount involved. It was mentioned that too much punishment can be counterproductive since children begin to pay no attention to it and therefore, it does not effect behavior. Generally spanking was the preferred way of dealing with misbehavior although the range of disciplinary measures was broad and included isolating the child in his room, sending him to the wall and ignoring the behavior. A point that many parents stressed was that the children were hit on the legs rather than the head. The overall impression was that punishment was given when deserved to stop particular kinds of behavior. General misbehavior such as breaking objects, spilling milk and not putting toys/clothing away was cited most frequently

followed by fighting with siblings/children and finally, to dangerous activities that included lighting matches and playing with the stove.

The parents' ethnic background was reflected in how tantrums were handled(question 5). Black children were usually spanked, whereas, Spanish children were either spanked or sent to bed, often preceeded by a bath. Many parents reported that tantrums had markedly decreased or had stopped as the child matured. Sematic problems related to the parents' definition of punishment became more evident in their answers to question 5 as some who had said they did not punish their children reported that spanking was the favored way of handling tantrums.

The view of the maternal grandmother's disciplinary tactics (question 6) was similar across groups with about half the parents reporting that her behavior was variable while the rest said she was strict all the time. The latter often added that now they felt that she had been wise to be strict, although some parents equated strict with mean.

Question 7 pertained to the number of children in the family and why this was or was not the optimum size for a family. Parents were uncomfortable when answering this question and it was also problematic for the interviewers, who felt it was intrusive. Most families in the study had from 2-4 children. The primary reason given for limiting family size was economic as many seemed to want more children and at least one child of each sex. There was a general feeling that it was not good for either the child or the family to have an only child.

The reasons for entering the program (question 8) broke down into two main categories. Black parents rated child learning over parent learning, whereas, the ratings were in reverse order for the Spanish population.

Question 9 inquired about child behaviors that occurred as a result of the program experiences. A majority of parents in all groups mentioned intellectual progress which was decribed as increased alertness and "smarter." Next, specific cognitive behaviors were listed such as, a greater interest in learning and asking more questions.

Responses to questions 10 and 11 overlapped so they will be discussed together. Parents across grous reported that they learned similar things from the program. Teaching skills acquired from the curriculum received the highest rating. This was followed by changes in the mother's affective behaviors and her handling of her child. For example, many parents reported that the program had taught them to be patient not only when teaching but in a variety of situations.

The answers to question 12 about preparing the child for school were variable. One-third to one-half of all parents mentioned the importance of teaching the child to respect the teacher and to behave in the classroom. A similar number talked about ways to prepare the child for school which included teaching him at home, explaining about the school routine and helping him learn how to ask questions. A small number planned to teach specific skills such as ABC's, numbers and reading.

Discussion.

Attitude measures were administered both to parents who had no contact with the program and to program completed parents. It was expected that information from the latter group would give the staff a measure of their success in transmitting the basic concepts of the program to the parents and would suggest changes that would make the curriculum more effective in terms of desired parent outcomes.

The Prenatal Questionnaire provided an estimate of the parent's views of the baby's needs, abilities and the effect of the environment upon him. Parents perceived physical care and emotional security as essential to the infant. The majority agreed that babies can learn and do so by watching and then imitating the behaviors seen, a passive/reactive state. The emerging skills of the baby were listed as physical, social and non-specific acts while mentation was virtually ignored. The baby was taught by the family which downgraded the important role of the mother/caretaker who has a major impact on mental growth. The actions of others were seen as instrumental in the baby's acquisition of learning skills. This cate-

gory was followed by observing behaviors, again, passive behaviors were rated above active/exploratory behaviors.

Program completed parents joined the program to help their children learn and to prepare them for school. Pre-program predictions that parents would rate child gains highest in terms of skills emanating from program experiences were supported. It was unexpected to find that the next category mentioned was behavioral changes. Possibly the parent's altered view of the child, due to her increased knowledge of expected behaviors, was instrumental in her feeling that he was behaving better. The mention of their children's intellectual progress suggests that parents had become more sensitive to the child's interest in learning. Suggestions for changing aspects of the teaching program plus requests for additional training indicated the parents' involvement and investment in the program. Finally, parents reported that teaching their children at home had helped them to progress. Again, this may relate to the parents' realistic expectations of what children can and cannot do at different ages and within this framework parents began to derive pleasure from the performance exhibited.

The Parent Attitude Scale dealt with a broad range of issues including child rearing practices, early learning and program effects. Most parents thought that learning starts after the first year of life. This suggests that somehow the fact that learning begins in the first days of life is not transmitted to new parents; which was corroborated by the findings from the Prenatal Questionnaire. This makes a strong case for using the prenatal period as a start in the the educational intervention process.

Disciplinary actions and ways of praising children appeared to be culturally based. The trends suggest that parents need information about alternative ways to handle children. For example, most parents did not allow children to talk at meal time although this was often the only time the family was together. Girls receive more praise than boys which may relate to the finding that boys, in this population, were more difficult to test from 2½-3. Their behaviors may be caused by the idea that boys should act like men and should not be "petted." The frequent complaint that children touched delicate objects and were punished suggests that parents could be exposed to other options such as child proofing the home during certain stages of development rather than using their energies primarily in a restrictive fashion.

Intellectual growth was important and was rated first in terms of child gains. Parents also felt that it was valuable for them to learn new ways to teach their children. Finally, the parents emphasized the importance of education by their high rating of teaching the child how to behave and respect the teacher as a means of preparing him for school. They also assumed the responsibility of preparing the child for school perhaps because they now felt they had the competence to help with the learning process.

The findings suggest that parents can utilize skill training which leads to improved performance by their children and more important to their sense of efficacy as the mother/teacher. Initially, it appears that the population under study was unaware of when and how learning begins and the importance of the interaction between mother and child in allowing learning to flourish. However, parents picked up these concepts even in this limited program of twelve sessions and used them for the benefit of their children. As Mrs. M. said, when telling what she had learned from the program, "That kids not learn so fast and even if they're wrong it is alright." That brief statement covers a host of ideas. Children learn differently from adults, it is important to encourage them to want to learn rather than emphasize the right answer and implied is a need for patience to handle the unique way the young child deals with the world in his effort to understand it.

RESULTS (Continued)

13. Did you have *other findings* not directly related to the specific aims *("serendipitous findings")*?

If yes, describe:

1 ☒ Yes ☐ No (23)

1. Socialization as a factor in parent participation. The value of the social aspects of the program to the parent was demonstrated by their response to the graduation party-meeting held when 10-12 parents had completed the program. The number of participants was mandated by the space available as each subject invited 2-4 people including children, husbands, relatives and friends. The focus of the event was on the parent who was honored for her achievement and received a diploma. Parents were also interested in the social aspects of the activities as many took pictures of their trainers and other parents as a momento of this festive event. Attendance on both sites was consistently high and was not dependent on the weather. The response rate ranged from 60-90% throughout the three years of the project. This was an indication of the importance of the program to the parents exclusive of the needs of their children.

People living in urban ghettos often are isolated in their apartments and have a relatively limited social life. The findings suggest that the intervention model based in the clinic setting can be used by parents to develop linkages with women who would otherwise remain strangers.

2. The influence of the physical setting on the Parent Education Program. The ecology of the environment for administering the program was assessed in three models: 1) a separated playroom in a pediatric clinic, Figure 10; 2) an open playroom in the waiting area of a well baby clinic, Figure 11; 3) an open playroom in the prenatal clinic, Figure 12.

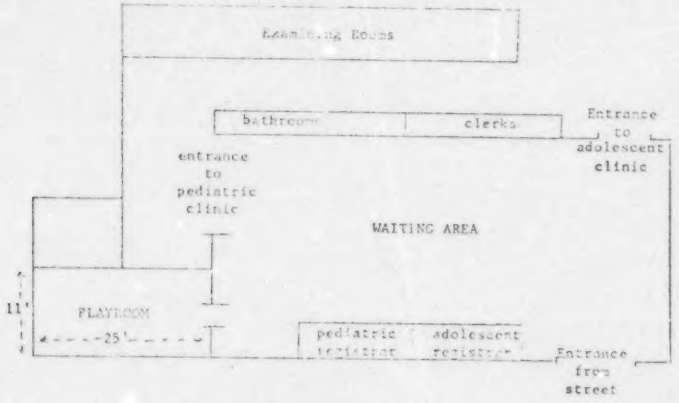

Fig. 10.---Separate playroom in the pediatric clinic of the Mount Sinai Hospital.

The exclusiveness of the separate playroom, Figure 10, limited the viability of the program and its input to the community. Even after three years of service the staff in this setting had to continue to invite parents into the playroom. Further, it was infrequently used by toddlers, the focus of the Parent Education Program, because they did not want to leave their mothers. This did not prove to be a problem in the open playroom since children could maintain eye contact with their parents.

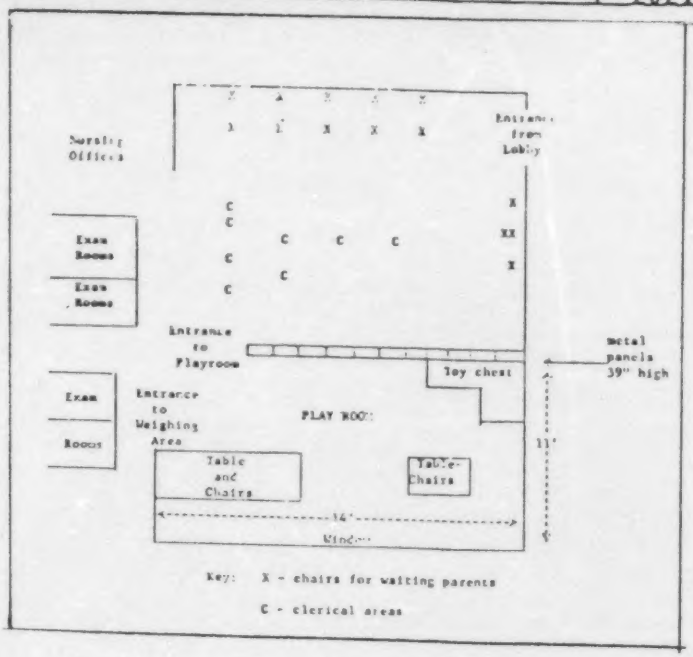

Fig. 11.---Open playroom in the well baby clinic of the East Harlem Child Health Station.

In the open playroom the staff provided a continual demonstration of how play can promote learning and had a direct interface with the audience of waiting parents. It was found that requests for program participation came primarily from parents who had observed the training sessions. The increased visibility in the open playroom led to a greater utilization of the program by the community. Another model of an open playroom that did not use partitions is presented in Figure 12.

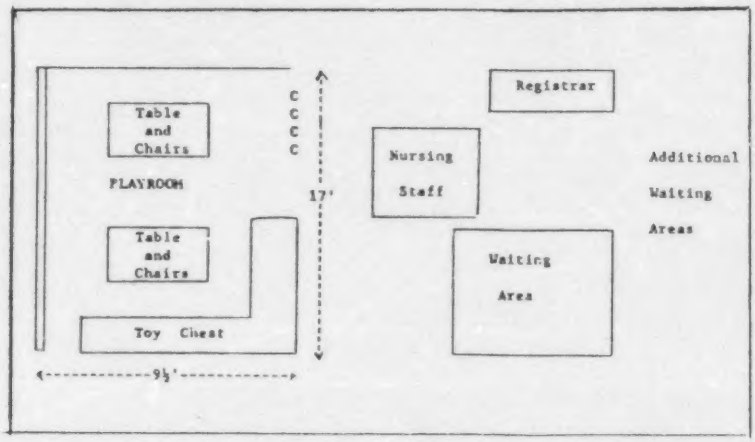

Fig. 12.---Open playroom in the prenatal clinic of the Mount Sinai Hospital.

The physical structure of the playroom in part defines its function. The findings suggest that the open playroom has the capability of establishing a natural interface with the community which makes it more effective in terms of program dissemination and subsequently, recruitment of parents than the separate playroom. It is also more economical as it uses staff, space and materials more effeciently.

3. Prenatal clinic as the site for an educational intervention program. The nurses in the prenatal clinic requested that the project staff administer a play program in their clinic to provide waiting children with supervision while their parents were undergoing physical examinations. The project staff was interested in assessing the validity of using the prenatal population as a source for volunteers for the intervention program. The program was limited in its scope as it was staffed by volunteers who were supervised by project staff. The physical layout is presented in Figure 12.

It was found that pregnant women quickly learned to use the service provided by the play area. They also approached the staff with questions about appropriate play activities at home, how to prepare the child for the new baby and similar problems. These conversations led naturally to information about the Parent Education Program.

The prenatal clinic was an excellent site for recruitment for the program. Since pregnancy is a healthy state women were approachable and interested in hearing about the program. Further, pregnant women keep regular appointments so they could easily arrange to combine two appointments in one visit to the medical center. It was observed that primaparas came by to observe the children playing. It is suggested that they might be optimum recruits for a cognitively oriented intervention program since the diffusion from the mother's program experiences would be multiplied when applied to later born children.

4. The value of the playroom as a visual model when recruiting program volunteers. Approximately two weeks before the play area was set up in the East Harlem Child Health Station interviewers attempted to recruit parents for the Parent Education Program. The response was very poor. However, when the play area was installed the rate of positive responses was similar to that at the Mount Sinai Hospital. It was apparent that the parents needed a visual model to demonstrate the theoretical basis of the program, that is, play is a valuable learning experience for children. Further, they were able to observe the staff members and evaluate the service offered and this encouraged them to think about entering the program. Whereas, before the play area opened they did not know what function the staff would perform. The play program was quickly accepted as a valuable service by both parents and clinic staff and this facilitated recruitment.

5. Group teaching vis a vis individual teaching sessions. Parents had requested additional support and instruction to meet the changing needs of their children. A pilot program was organized as an extension to the base program (Morris, 1976). The Extended Parent Education Program was made up of six sessions that were held once a month for 6-8 parents. A group format rather than individual teaching sessions was used because parents had learned to keep appointments, the group required less staff and was more economical and finally, it gave parents an opportunity to socialize with peer-group members from the community who might provide needed support in the future.

The group was effective as an educational tool. Discussing the social and emotional aspects of development with others made the parents aware of the many changes that occur in young children that are natural phenomena rather than seeing each problem and/or change as idiosyncratic to their own child. The concern with other aspects of development, along with cognitive growth, was a natural outgrowth of the discussion period. Parents were repeatedly confronted with the fact that change is continuous and expected in the early years and began to see how different aspects of growth were related. The importance of support to allow the child to mature properly was reinforced by the comments and suggestions of the parents. The group appears to be an effective vehicle for a cognitively oriented program and perhaps could be evaluated as a primary teaching method.

Item No. 13

4. Effect of the parent's educational level on program utilization. The population treated in the Parent Education Program had a wide range of educational experiences. It would seem that parents who had graduated high school would have adquate parenting skills. However, educational attainment is no guarantee of experience with young children. It was found that parents with more education picked up the nuances of the curriculum more quickly and were better able to integrate it into their daily routines. than parents with limited education. Interestingly more members of this "advantaged" group asked for additional training and support than parents with less educational experience. It was found that the more educated parents were prime disseminators of program information. Since they occupied a high status in the community they were responsible for a greater spin-off in terms of program volunteers. The findings suggest that parenting programs should reach out to a broad spectrum of the target population since the upper strata of the community appears to be instrumental in institutionalizing a new service. Further, their participation in the program provided an impetus for less motivated and possibly more high-risk parents to volunteer for the training.

14. How do the *overall results* of your project fit into these descriptions?
(If you had multiple expectations or hypotheses, base your response on the predominant trend of the results).

- [X] Confirming your hypotheses or expectations (24)
- [ ] Disproving your hypotheses or expectations (25)
- [ ] Inconclusive (26)

15. Did your research result in significant *methodological developments?*

1 [X] Yes (27)
2 [ ] No

If yes, describe: 1. Mode of entry, a measure of the volunteerism factor. Two modes of entry were devised since it was suspected that many clients who agreed to participate wanted to please the interviewer and did not intend to enter the program. In mode one, the initial interview and the IQ test session were separated in time while for mode two subjects testing was carried out at the initial contact. As predicted almost 50% of the mode one clients did not keep appointments for the test (Progress Report, 1972). Comparisons of initial IQ scores of mode one and mode two subjects who had entered or not entered the program revealed little differences (Progress Report, 1973). A further analysis of the initial IQ scores of the Program Completed subjects supported the se findings.
2. Time of entry, early/late groups. The use of a traditional experimental/control group design would have antagonized the community, see p. 3a. The design developed met the approval of the community and provided the project with an untreated "late group" that was compared with an early, treated group.

16. How would you describe the *impact* of your project?
(Rank any multiple answers, using "1" as most appropriate)

IMPLICATIONS:

- (28) [3] Opening up a new line of research
- (29) [1] Contributing to the knowledge base of the field
- (30) [2] Providing facts ready for application in a field
- (31) [ ] Indicative of a "dead-end" line of pursuit

17. Do you have immediate plans for *further research* in this area?

If yes, describe:

1 ☐ Yes (32)
2 ☒ No

18. Beyond your own plans, what is your opinion of the future directions this research area should take?

1. Determine optimum site, e.g. prenatal clinic, well baby clinic, or pediatric emergency room for an educational intervention program based in a medical setting. Compliance can be measured by rate of program completion and percent of parents who request entry without recruitment.
2. Determine the optimum time to begin educational intervention mediated through the mother in terms of the age of the child and/or birth order. Program effects can be measured by the target child's performance over time, performance of subsequent siblings (diffusion effects) and parent outcomes including teaching behaviors and participation in community organizations.
3. Develop pre- and post-training measures to evaluate the processes involved in parent teaching which would measure the effectiveness of the curriculum in producing desired parent behaviors.
4. Compare the following methods of teaching parents: 1) individual sessions; 2) individual and group sessions; and, 3) group sessions only. The effects of different teaching methods can be measured by compliance, parent outcomes and the child's performance.

19. Do you have *specific suggestions (experiments, cautions, etc.)* for other research in this area?

If yes, describe:

1 ☒ Yes (33)
2 ☐ No

Develop a parent child interaction measure that can be used for service as well as research programs. It is possible that the Parent Child Observation could be adapted to measure parent behaviors. Parents, in the study, felt the observation was a valuable experiences and many requested additional sessions. It could be quantified to measure specific parent behaviors that would be desired outcomes of the treatment program. Such a devise would enable the staff to monitor program implementation regularly and determine the time needed to produce behavioral changes. It would also allow the staff to give parents concrete suggestions on how to handle individual problems.

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1973 April 2-3; May 7-8; September 17-18.
1974 November 4-5.
1975 May 19-20.

Participants from 40 institutions attended the workshops. The following states were represented: New York, New Jersey, Pennsylvania, Illinois, Texas, Wisconsin, Ohio, Massachusetts, Connecticut, Maryland and Washington, D.C.

Convention presentations: (A. G. Morris unless others cited)

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APPENDIX A

Interview form, Initial Contact With Parents
Interview form, Initial Evaluation: Parent
Parent Child Observation
Parent Child Interaction Measure: Instructions to parents
Scoring Procedures
Data sheets

Parent's Post-Training Comments
Parent Attitude Scale
Book Task

Mount Sinai Hospital
Department of Pediatrics

Parent Education Program

INITIAL CONTACT WITH PARENTS

(1)

.Name of child _____ I.D.#..... — — — — — — 1-6

.Today's date __ __/__ __/__ __ Birth date __ __/__ __/__ __ Age in mos..... — — 9-10

.Sex: Male=1; Female=2 ..... — 11

.Birthplace _____ (NYC=1; South=2; Puerto Rico=3; Other=4)..... — 12

.Name of Hospital _____ Born in hospital: yes=1; no=0..... — 13

.Clinic # __ __ __ __ __ __ Telephone # __ __ __-__ __ __ __

.Name of parent _____ Zip code: __ __ __ __ __

.Name on mailbox _____ Address _____ Apt.# ____

.Language: Parent _____ ....(Eng.=1; Span.=2; Other=3; Eng/Span.=4)... — 14
Child _____ ..... — 15
Home _____ ..... — 16
Interview _____ ..... — 17

.Place of interview .....(Clinic=1; Emergency Rm.=2; WCHS=3; Telephone=4; OB=5; EHCHS=6)..... — 18

.Distance from institution: Walking=1; Less than ½ hr. public transportation=2; More than ½ hr. public transportation=3..... — 19

.Will you come in for the evaluation: Yes=1; No=0..... — 20
.Payment: ADC=1; Medicaid=2; Other=3..... — 21

.Birth order: 1st born=1; 2nd born=2; etc..... — 22

.Number of other children ..... — — 23-24

.Sex	Age in yrs.	Sex	Age in yrs.
___	___	___	___
___	___	___	___
___	___	___	___
___	___	___	___
___	___	___	___

(list oldest to youngest) (Male=1 Female=2) — — 25, 26-27 / — — 28, 29-30 / — — 31, 32-33 / — — 34, 35-36 / — — 37, 38-39

.Kept evaluation appointment: Show=1; No show=0; Int./Eval. Simultaneous=3..... — 42

.Group assignment: Early=1; Later=2 ..... — 43

.Date of evaluation __ __/__ __/__ __
.Age at time of evaluation (in months)..... — — 45-46

.I.Q. score..... — — — 48-50

.Ethnicity: Spanish=1; Afro-American=2; Other=3..... — 53

.Sex: Male group=1; Female group=2..... — 54

..Appointment time _____ Place _____

Interviewer _____ (Comments on back)

INITIAL EVALUATION: PARENT

(2)

terviewer_____ Today's date __ __, __ __, __ __

Name of child_____ I.D. # __ __ __ __ __ __ 1-6

Name of parent_____ Birthdate of parent __ __, __ __, __ __ 15-18
month, day, year

Age of parent..... __ __, __ __ 19-22
years, months

Birthplace of parent: NYC=1; South=2; Puerto Rico=3; Other=4(specify)_____ __ 23

Length of time in New York City ..... __ __, __ __ 24-27
years, months

Location of school: NYC=1; South=2; Puerto Rico=3; Other=4(specify)_____ __ 28

Last grade completed ..... __ __ 29-30

How long have you lived at your present address..... __ __, __ __ 31-34
years, months

Housing: Public=1; Private=2..... __ 35

Number of rooms reported..... __ __ 36-37

Who takes care of your child during the day? Mother=1; Relative or friend=2;
Daycare=3; Other=4 (specify)_____..... __ 38

Television: yes=1; no=2..... __ 39

Kind: black and white=1; color=2..... __ 40

CHILD
Total number of hours t.v. watched..... __ __ 41-42

PARENT
Total number of hours t.v. watched..... __ __ 43-44

Preferred language: English=1; Spanish=2; English&Spanish=3..... __ 45

Preferred programs (child)_____

Watches Sesame Street: Never=1; Sometimes=2; Regularly=3..... __ 46

Preferred programs (parent)_____

(Score in catagories as listed: yes=1; no=2 according to preferred programs)

Quiz shows..... __ 47
News..... __ 48
Variety..... __ 49
Comedy..... __ 50
Mystery..... __ 51
Medical..... __ 52
Movies..... __ 53
Soap opera..... __ 54

Mount Sinai Hospital
Department of Pediatrics

Parent Education Program
Date _____

OBSERVATION OF TRAINING: PARENT AND CHILD, LESSON #3

Name of child _____ I.D. # ... | _ _ _ _ _ _ | 1-6

Location: Mount Sinai Hospital = 1; East Harlem Child Health Station=2;..... | _ | 7

CHECK ONE:

1. Parent's method of handling child: permissive=1; average=2; authoritarian=3..... | _ | 8

2. Parent's attitude: disinterested=1; average=2; overconcerned=3..... | _ | 9

3. Attitude of child toward parent: uncooperative=1; overly attached=2 affectionate and responsive=3..... | _ | 10

4. Response of child toward trainer: normally responsive=1; shy and close to parent=2; very demanding=3..... | _ | 11

5. Follows training method: yes=1; no=2; yes with adaptation=3..... | _ | 12

6. Parent's response during training: praises child when appropriate=1; too much praise=2; no praise=3..... | _ | 13

7. Handles materials effectively: All the time=1; Sometimes=2; Never=3..... | _ | 14

8. Uses content words: All the time=1; Sometimes=2; Never=3..... | _ | 15

9. Gives explanations related to exercise: All the time=1; Sometimes=2; Never=3..... | _ | 16

COMMENTS: _____

_____

_____

_____

_____

_____

Form Number..... | 13
Revised Apr. 23, 1973.

PARENT EDUCATION PROGRAM

PARENT CHILD INTERACTION MEASURE

TOY SORTING TASK:

Materials:

Nine toys and a partitioned box are used for this task. The box is divided into three equal sections by separators, (□□□). The division of the box into three sections serves to emphasize the distinctiveness of the three groups to be formed later. The three types of objects were selected because they were assumed to be familiar to all the children. The toys are: three plastic cars, three small chairs (dollhouse furniture), three plastic picnic spoons. Among each type of toy (cars, chairs, spoons), one is red, one yellow, and one green.* Thus the nine toys can be sorted into three groups in either of two ways: by color (red toys, green toys, yellow toys) or by object (cars, chairs, spoons).

Procedure:

The two sorting methods are taught to the mother while the child is out of the room. The specific instructions follow:

(Begin with the box empty, and the toys in random order on the table.)

1) HERE ARE SOME TOYS. THERE ARE DIFFERENT WAYS THEY CAN BE PUT TOGETHER ON THE BOARD.

(sort by object) THESE GO TOGETHER BECAUSE THEY'RE ALL... (pause). (Point to each group and elicity answer: spoons, chairs, trucks (cars).)

2) THE TOYS CAN BE PUT TOGETHER IN ANOTHER WAY, TOO. (take toys off board)

(Sort by color; random placement within each section) THESE GO TOGETHER BECAUSE THEY'RE ALL...(pause). (point to each - red, yellow, green)

Scoring of Verbal Interactions: PCIM

Verbalizations by parent during task:

1. Nonquestion suggestion: A statement indicating what the mother wants the child to do next (e.g., "Find a yellow one like this.")
2. Question suggestion: Suggestion, as above, but stated in interrogative form (e.g., "Where does this yellow one go?")
3. Positive feedback: An expression of approval about what the child has already done, or general approval of the child (e.g., "Good.")
4. Negative feedback: An expression of disapproval about what the child has already done, or general disapproval of the child (e.g, "That's not too good.")
5. Total interaction: # of statements/minute.

Suggestions from parent during task:

6. Level 1: Orienting suggestions, focusing strategies, suggestions that restrict the attention to some major segment of the task (e.g., "Look at the cars," "Let's start with the cars.")
7. Level 2: Suggestions about specific pieces, or specific locations on the house, but not both (e.g., "Find a yellow one like this.")
8. Level 3: Solutions. Suggestions indicating both which piece was to be used and where it was to be placed (e.g., "Put that one over here.")

Analysis of the mother's speech, based on transcriptions:

1. Quantity of speech: total number of words spoken.
2. Mean sentence length: total number of words divided by the total number of complete sentences.
3. Adjective/verb quotient: total number of adjectives divided by the total number of complete verbs.
4. Syntactic complexity: number of subordinate clauses divided by the number of sentences.
5. Percentage of personal pronouns: number of personal pronouns divided by the total number of words.

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Orienting - mention class and task.

1. Reference to structure of task involving 2 dimensions, 3 cues.

"We will sort by objects - spoons, airplanes, and chairs, and color - red, yellow, green."

2. Reference to structure of task involving 1 dimension, 3 cues.

"Let's put all the colors together (the reds, the yellows, the greens")

3. Reference to structure of task involving 1 cue.

"Let's put all the yellows together"

Specific I - mention class only.

4. 2 dimensions, 3 cues.

"These are the object groups - spoons, airplanes, and chairs - and these are the colors - red, yellow, green." or "Find me. . . . . ."

5. 1 dimension, 3 cues.

"Find me the objects - all the spoons, the airplanes, and the chairs."
"These are the objects - all the spoons, the airplanes, and the chairs."

6. 1 cue.
"Look for all the spoons."
"Look for all the yellows."
"These are all the spoons." Be careful (see 7)

Specific II

7. Teaching the class label.

"These are the red ones."
"These are all the spoons."

8. Teaching what sorting is.

"Look, I am putting these into groups."
"See, I put them all together."

9. Item or a specific place in box (over there)

"This is a red one." (7)
"Find the airplane."

Solution - directive - mentions thing and place.

10. Solution with information

"Put the red one over there."
"Put the spoon in the left box."

11. Solution with no information

"Put it here."

Task analysis

Mother's suggestions may vary along three dimensions:

a. Bi-dimensional vs. uni-dimensional

bi
i.e. "we'll sort by colors and by objects"
"find a red airplane

uni
i.e. "we'll sort by colors"
"let's start with the airplanes"
"this is red"

b. Mention of dimensionality vs. non-dimensionality

dimensional
i.e. "find a red airplane"
"put the spoons together"

non-dimensional
i.e. "put it over here"
"find it for me"

c. Class properties vs. item properties

class
i.e. "put the yellow ones here"
"those are all the spoons"

item
i.e. "this is red"
"put the spoon there"

Can score according to amount of conceptual information as well as directiveness.

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* Dimensions are 1. colors - reds, greens, yellows
2. objects - planes, spoons, chairs

PARENT-CHILD INTERACTION MEASURE (Part 1)

Date administered __ __/__ __/__ __ by _____ I.D. #...|_ _ _ _ _ _ 1-6

Mother's nonverbal intrusions during PCIM

1. Placement of object (frequency)

2. Movement of object (frequency)

3. Handing an object to child (frequency)

4. Other (pointing, gesturing) (frequency)

5. Mother's verbal interaction during PCIM:
Total time of parent-child interaction (in minutes)

6. Total number of mother's statements

Language used for PCIM: 1=Spanish; 2=English; 3=Spanish/English

7. Question suggestions (open-ended suggestions which elicit information and/or placement response from child)

8. Nonquestion suggestions (declarative suggestions which are informative and/or directive.)

9. Positive feedback (frequency)

10. Negative feedback (frequency)

PCIM (pre-training = 1; post - = 2; post-post = 3; post-post-post = 4)

Mother's verbal interaction: classification of suggestions (not all are classifiable)

11. Suggestion 1 (Orienting, reference to structure of task involving two dimensions, three cues)

12. Suggestion 2 (Orienting, reference to structure of task involving one dimensions, three cues)

13. Suggestion 3 (Orienting, reference to structure of task involving one cue)

14. Suggestion 4 (Descriptive, reference to two dimensions, three cues)

Child's age at PCIM, in months .....

I.D. # .

15. Suggestion 5 (Descriptive, reference to one dimension, three cues)

16. Suggestion 6 (Descriptive, reference to one cue)

17. Suggestion 7 (Teaching the class label--i.e., orienting to the dimension and teaching the name of each cue)

18. Suggestion 8 (Teaching what sorting is--how and why to group)

19. Suggestion 9 (Descriptive, specific item only or one specific place in box)

20. Suggestion 10 (Directive, a specific solution which contains some descriptive information about item)

21. Suggestion 11 (Directive, a specific solution without information)

22. Suggestion 3-11 (Orienting and directive, reference to class by pronoun only)

Child's verbalizations

23. (I) Involvement (comprehensive tally of all child's verbalizations which indicate involvement in and attention to the task, in any form)

24. (N) Noninvolvement (comprehensive tally of all child's verbalizations which indicate noninvolvement in and inattention to the task)

Child's verbalizations: classification of levels of understanding

25. (A) Initiating (verbalization indicating appropriate participation independent of mother's suggestions)

26. (B) Asking for more specific information (when child's question reflects a basic understanding of the task, but mother has been too vague)

27. (Cq) Following directions of mother, when she asks a question and child must supply the missing information

28. (Cs) Following directions of mother, when she has made a completely informative directive

29. (D) Displaying confusion (related in content to mother's previous directive)

30. (E) Repeating all or part of mother's suggestion

31. (F) Noninvolvement: interest in objects apart from doing task

32. (G) Noninvolvement: rejecting suggestions and help from mother

Department of Pediatrics
Mount Sinai School of Medicine

PARENT'S POST-TRAINING COMMENTS

Name_____ Date_____

1. Why did you join the program?

2. What does your child do now that he did not do before the program?

3. How do you think the program can be improved?

4. How do you think the program has helped your child?

PARENT ATTITUDE SCALE*

1. a. At what age did_____start to learn?
   b. Why do you think he started at that age?
   c. How does a child learn?

2. a. Do You allow your children to talk when grownups are visiting?
   b. Should children talk mostly to children?
   c. Should a child be allowed to talk at the supper table?

3. a. At what age did you start praising_____?
   b. How often do you praise him?
   c. What kind of thing do you praise him for?
   d. Who praises him?

4. a. At what age did you start punishing_____?
   b. How much should a child be punished?
   c. What kinds of things do you punish him for?
   d. Who punishes him?

5. a. What do you do about temper tantrums when_____gets angry and hits and kicks you?
   b. How often does he get temper tantrums?

6. When you were small was your mother very strict some days and very easy other days?

7. a. How many children do you have?
   b. Do you think that's a good number?
   c. Why?

8. When you heard about the program what interested you about it?

9. a. After you finished the program did_____act differently than he did when you started?
   b. What were the differences?

10. a. After you finished the program did you treat_____differently than when you started?
    b. How?

11. What are the most important things you learned from the program?

12. Before a child starts school, what are the most important things a parent can do to help him to do well in school?

*from M. Gutelius, Child rearing attitudes of teen-age negro girls. A.J. of Public Health, 1970 60(1), 93-104.

BOOK TASK

This is administered immediately after the explanation and demonstration of the Toy Sorting Task. The Toys and box are set aside so that the table is cleared. The parent is then given the following instructions:

> Here is a book to show _____ before we start so he can get used to the place. I'll give you a few minutes to show it to him.

The book is The Little Red Hen in English or Spanish depending upon the language normally used by the mother and child. The observation begins as soon as the parent picks up the book. The time allowed is two minutes.

SCORING SHEET: BOOK TASK

	INITIATION	RESPONSE	N.A.*
Mother gives introductory explanation about book			
Location:			
Book is in front of mother			
Book is in front of child			
Book is between mother and child			
Mother turns page			
Child turns page			
Both turn page			
Method: (mother)			
1. Mother hands book to child, no interaction			
2. Mother points with no information			
3. Mother discusses, labels objects			
4. Mother reads story verbatim			
5. Mother adapts story, paraphrases, uses pictures			
6. Mother elicits label from child			
Method: (child)			
Child points with no information related to content			
Child labels objects			
Child tells story related to pictures			
Child tells story unrelated to pictures			
Child asks mother about/to do something			

Mother's primary method - 1 2 3 4 5 6 (do immediately after observation)
In your judgement, can mother read? yes____ no____

USE THIS CATEGORY SPARINGLY
N.A. = not applicable
not appropriate
specify behavior under comments (on other side)

General profile, score from 0 - 1 - 2. (0=least; 2=most; 1=intermediate, use this sparingly)

MOTHER:		CHILD:	
	Supportive ____		Cheerful ____
	Authoritative ____		Invested in task ____
	Critical ____		Distracted ____
	Timid ____		Frightened ____
	Tense, anxious ____		Cranky ____
	Helpless ____		Angry ____
			Manipulative ____

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APPENDIX B

Parent Education Program Curriculum, Sample Worksheets
List of materials used for teaching

MATCH-UPS. I - Color matching and object labeling Age___: Exercise___

Materials: "Colors and Things" Match-Ups puzzle (Pla-skool) or "Names and Things" Put-Togethers puzzle (Child Guidance Products).

Preparation: red, blue, green, and yellow puzzles only.

Teach only one color at a time. There are three puzzles for each color.
Present one puzzle at a time when starting. After the puzzle has been completed put it away and present the next one.
Before presenting a new color repeat a color he has already learned so that the child begins the new task with a feeling of success.

Method: Present puzzle already put together.

THIS IS A RED BALL. SEE, I WILL TAKE IT APART. CAN YOU PUT IT TOGETHER?

After the puzzle is completed:

VERY GOOD.

Pointing to the puzzles:

CAN YOU TELL ME WHAT THIS IS?

Present the next puzzle using the same method until you finish one color.
Go over the 3 puzzles of one color until the child knows them well before going on to the next color.

As the child begins to understand the game, matching the 2 parts of the puzzle, you may mix up all the puzzles of one color and ask the child to put them together.
It also helps to talk about the different objects:

THIS IS A BLUE COAT. WHAT DO YOU WEAR WHEN YOU GO OUTSIDE?
WHAT DO YOU WEAR WHEN IT IS COLD OUTSIDE?, etc.

* * * * * *

(1) Teach only one color at a time.
(2) Each time the child learns to name and put together all the puzzles of one color you may start teaching another color.
(3) Allow him to work first with 2 colors, then 3 colors, and finally 4 colors.

MATCH-UP PUZZLES

I.

II.

III.

TEACH ONE COLOR AT A TIME:

RED

BLUE

YELLOW

GREEN

CAN PUT TOGETHER RED PUZZLES YES___NO___

CAN PUT TOGETHER BLUE PUZZLES YES___NO___

CAN PUT TOGETHER GREEN PUZZLES YES___NO___

CAN PUT TOGETHER YELLOW PUZZLES YES___NO___

CAN NAME OBJECTS ON RED PUZZLES YES___NO___

CAN NAME OBJECTS ON BLUE PUZZLES YES___NO___

CAN NAME OBJECTS ON GREEN PUZZLES YES___NO___

CAN NAME OBJECTS ON YELLOW PUZZLES YES___NO___

CANNOT NAME THE FOLLOWING OBJECTS:_____

_____

COMMENTS:_____

_____

WHO WORKED WITH YOUR CHILD?_____

HOW OFTEN DID YOU WORK WITH YOUR CHILD?_____

SHAPE BOX - Shape Discrimination Age____: Exercise_____

Materials: "Shape Box" (Creative Playthings) with five different shaped blocks.

Place the box in front of the child. Take out the blocks.

THIS IS A BOX WITH DIFFERENT SHAPED HOLES. SEE. (point to holes). THE BLOCKS FIT INTO THE HOLES.

THIS BLOCK FITS INTO THE ROUND HOLE. SEE, I CAN ROLL IT IN MY HANDS.
Roll the block between your hands. Hand it to the child and ask him to feel it.
With your finger, trace around the round hole in the box and ask the child to do the same.
Then, place the block into the round hole.
THIS BLOCK FITS INTO THE ROUND HOLE.
NOW, FIND ANOTHER BLOCK THAT WILL FIT INTO THE ROUND HOLE.
Allow him to try the different holes until he finds the correct one.
Praise him when he does so.
If he needs help show him the correct hole.

Using the method explained above, follow with:

THIS HOLE IS SHAPED LIKE A SQUARE. IT HAS FOUR SIDES AND THEY ARE ALL THE SAME SIZE.
THIS IS A RECTANGULAR HOLE. IT HAS TWO LONG SIDES AND TWO SHORT SIDES.
THIS IS A TRIANGULAR HOLE. IT HAS THREE SIDES.

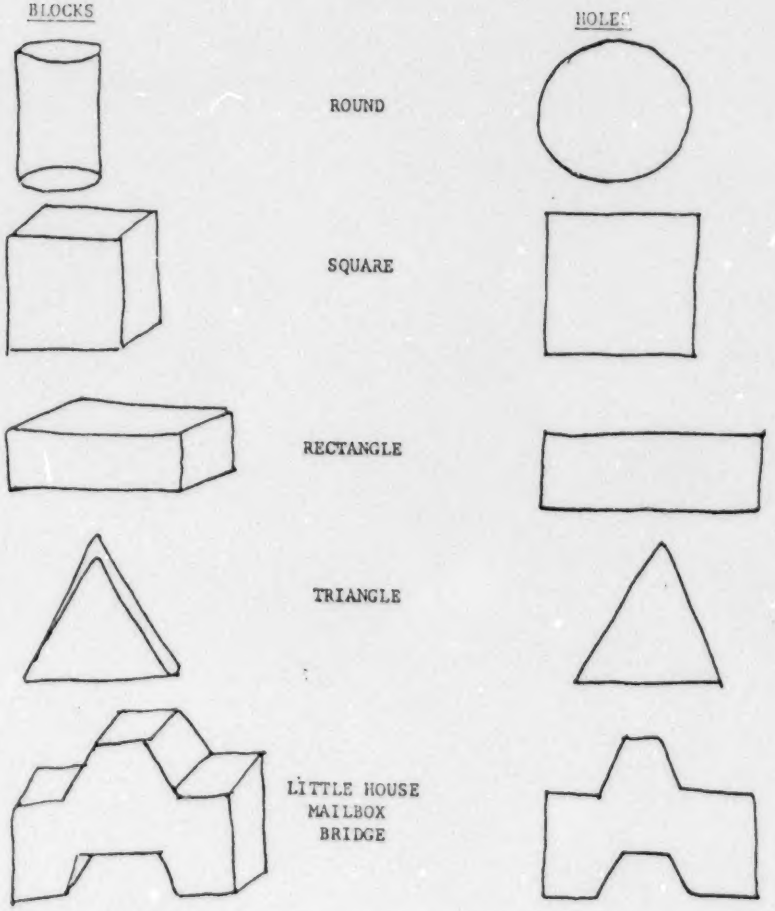
THIS HOLE HAS STRAIGHT SIDES AND A LITTLE CURVE AT THE BOTTOM.
Let the mother decide what to call it. Suggestions: mailbox, little house.

When he has finished, ask the child to remove the blocks from the box and start again, saying:
WHAT BLOCK WOULD YOU LIKE TO PUT IN FIRST? WHAT BLOCK GOES IN THE _____HOLE?

When the child puts the block into the box ask him to name the shape of the hole. Young children will have trouble with the names and this is perfectly normal. However, it is important for you to tell him the correct names even if the child cannot do so.

If he makes a mistake:
DOES THIS ONE GO IN THERE? TRY ANOTHER HOLE. DOES IT FIT IN THERE? TRY AGAIN.

SHAPE BOX



CAN PUT ALL THE BLOCKS INTO THE CORRECT HOLES YES___NO___

CAN NAME SHAPES OF THE HOLES YES___NO___

COMMENTS: _____

WHO WORKED WITH YOUR CHILD? _____

HOW OFTEN DID YOU WORK WITH YOUR CHILD? _____

TWO YEARS

1. Color Cone
2. Learning Tower or Building Cups
   BIG AND LITTLE
3. Thing Puzzle (Creative Playthings)
   Golden Shape Book, e.g., THE CAR BOOK,
   SCUFFY THE TUGBOAT
4. Plastic Puzzle
   THINGS IN MY HOUSE or MY FIRST GOLDEN
   DICTIONARY
5. Shape Box
   ELEPHANT'S BIRTHDAY PARTY*
6. Beads 1
   COLORS
7. Match-ups, Things, Part 1
   ARE YOU MY MOTHER?
8. Pegs Color
   GO DOG GO or CAPS FOR SALE
9. Match-ups, Things, Part 2
   Beads, 2; Cutting 1
10. Fit-a-shape
    BIG ENOUGH
11. Popit counters
    THE BUS FROM CHICAGO and
    TEN APPLES ON TOP
12. Two Cardboard Puzzles
    CURIOUS GEORGE

(All books in capital letters)

THREE YEARS

1. Shape Box
2. Cubes
   BIG AND LITTLE
3. Beads 1
   Cutting 1
   COLORS
4. Match-ups, Things, Part 1
   THINGS TO SEE
5. Pegs Color
   GO DOG GO or CAPS FOR SALE
6. Fit-a-shape
   BIG ENOUGH
7. Match-ups, Things, Part 2
   Beads, 2; Cutting 2 and 3
   LITTLE BLUE AND LITTLE YELLOW
8. Cubes and Sandpaper Numbers
   TEN APPLES UP ON TOP
9. Parquetry Blocks
   ONE MONDAY MORNING
10. Match-ups Alphabet, Part 1;
    Sandpaper letters
    MY FIRST GOLDEN DICTIONARY
11. Tracing and Coloring
    ARE YOU MY MOTHER? or
    THE BUS FROM CHICAGO
12. Match-ups Alphabet, Part 2
    Sandpaper letters
    CURIOUS GEORGE